United States Army Corps of Engineers
Chicago District

Collection and Analysis of Sediment Samples From the South Fork South Branch, Chicago River

July 21, 2004

Draft Final Report

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Acronyms

ASTM	American Society for Testing and Materials
CCD	City of Chicago Datum
CDM	CDM Federal Programs Corporation
CRCW	Chicago River Controlling Works
DPR	detailed project report
DQO	data quality objective
EM	Engineer Manual
EPA	Environmental Protection Agency
^{o} F	degrees Fahrenheit
GPS	global positioning system
HASP	Health and Safety Plan
HDPE	high-density polyethylene
HEM	hexane extractable material
HTRW	hazardous, toxic, and radioactive waste
IDW	investigation-derived waste
IEPA	Illinois Environmental Protection Agency
kg	kilogram
LCS	laboratory control standard
mg	milligram
MS	matrix spike
MSD	matrix spike duplicate
MWRDGC	Metropolitan Water Reclamation District of Greater Chicago
NGVD	National Geodetic Vertical Datum
MICE	Methods Information Communication Exchange
MWRD	Metropolitan Water Reclamation District
N/A	not applicable
NR	not recorded
NWD	North Western Division
PCB	polychlorinated biphenyl
PID	photoionization detector
PNA	polynuclear aromatic
PPE	personal protective equipment
ppm	parts per million
PRP	preliminary restoration plan
QA	quality assurance
QC	quality control
RAPS	Racine Avenue Pump Station
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SDG	sample delivery group
SFSB	South Fork South Branch
SGT	silica gel treated
SOP	standard operating procedure
SOW	scope of work
SVOC	semi-volatile organic compound

Acronyms (continued)

TCLP	toxicity characteristic leaching procedure
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USCS	unified soil classification system
VOC	volatile organic compound

Executive Summary

CDM Federal Programs Corporation (CDM) was contracted on December 19, 2003 by the United States Army Corps of Engineers (USACE), Chicago District, to conduct sediment sampling and analysis at South Fork South Branch (SFSB), Chicago River.

The major objective of this sample collection and analysis effort is to assess whether if the sediment in Chicago River (SFSB) is deemed to be hazardous per exceedance of toxicity characteristic leaching procedure (TCLP) and other hazardous waste criteria.

Thirteen sediment cores were advanced along the length of the project site and five grab samples were collected from April 20 through 22, 2004. Sediment cores were collected using a Rossfelder P-3 vibracore unit and grab samples were collected using a standard ponar dredge. Continuous core samples were collected from the top of the sediment to a depth equal to the thickness of the sediment layer in each sample location. Sediment depths ranged between 5.5 and 16.8 feet. Sediment was field screened using a photo-ionization detector (PID) and classified using the Unified Soil Classification System (USCS). Sediments encountered at the site consisted primarily of sand and clay.

Thirteen core sediment samples and one field quality control duplicate sample were submitted for laboratory analysis for bulk chemistry parameters and TCLP and hazardous waste parameters. Five sediment grab samples were submitted for laboratory analysis for bulk chemistry parameters.

Sample results for polynuclear aromatic hydrocarbons were typically in the parts per million (ppm) range in most samples. Other semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), oil and grease, and metals were detected in the samples.

Analytical results were compared to Environmental Protection Agency (EPA) TCLP regulatory levels, but none of the compounds detected exceeded the criteria. Ignitability (flash point) was identified in one sample: SF-2004-B02 at 124 degrees Fahrenheit. Cyanide and sulfide reactivity were compared to EPA SW-846 levels and there were eleven samples with reactive sulfide results above 5,000 milligrams per kilogram (mg/kg): samples SF-2004-B01a and SF-2004-B02 (the two northernmost samples). Total PCB levels were compared to the Toxic Substances Control Act (TSCA) regulatory level and there were no exceedances.

Section 1
Introduction and Scope of Work

1.1 Introduction

This report presents the results of the collection and analysis of sediment samples in the South Fork South Branch (SFSB), Chicago River. The project was conducted by CDM Federal Programs Corporation (CDM) on behalf of the U.S. Army Corps of Engineers (USACE) under Contract Number DACW23-02-D-0003 as Delivery Order 3.

The USACE Chicago District and its local sponsor are investigating alternatives for the restoration of the SFSB. The preliminary restoration plan (PRP) has been approved and the project is now in detailed project report (DPR) phase, i.e. feasibility phase. Sediment characterization is critical in the development of a stream restoration plan. The analytical results produced from this study will be an integral piece of the DPR. Information regarding the extent and depth of contamination, along with toxicity characteristic leaching procedure (TCLP) results and other data that indicate presence or absence of hazardous waste in the SFSB, will help to determine the impacts of sediment quality to project costs, authority, and plan of action (USACE Scope of Work [SOW] 2003).

1.2 Site Description and History

The following information is from the USACE SOW for this project.

The SFSB is listed as an impaired stream in the Illinois Environmental Protection Agency (IEPA) 303(d) report, partially due to contaminated sediments. Environmental conditions that were recognized to have an impact on sediment quality for the SFSB include the discharge of animal remains from nearby stockyards that operated in the early 1900s, and pollutant sedimentation from recent discharges of storm water runoff. The site location is shown on **Figure 1-1**.

Previous sediment sampling was performed by the United States Environmental Protection Agency (USEPA), Metropolitan Water Reclamation District (MWRD), IEPA, and the Wetlands Initiative as summarized below:

- The IEPA collected two samples from the SFSB in September 1994. One sample was collected beneath the 35th street bridge, and the other beneath the Stevenson Expressway bridge.

- MWRD collected sediment samples from three locations in the SFSB in January of 1995. One sample was collected in the turning basin at the north end of the SFSB, one near the O Keefe Brothers Coal and Oil Company, and one on the south end of the fork north of the Racine Avenue Pumping Station.

- The USEPA performed a survey of sediment contamination over the entire Chicago River in October of 2000 (USEPA 2003). A 72-inch sediment core was collected in the SFSB during this event.

Previous sampling locations are shown in **Figure 1-2**.

Figure 1-1
Site Location
Map

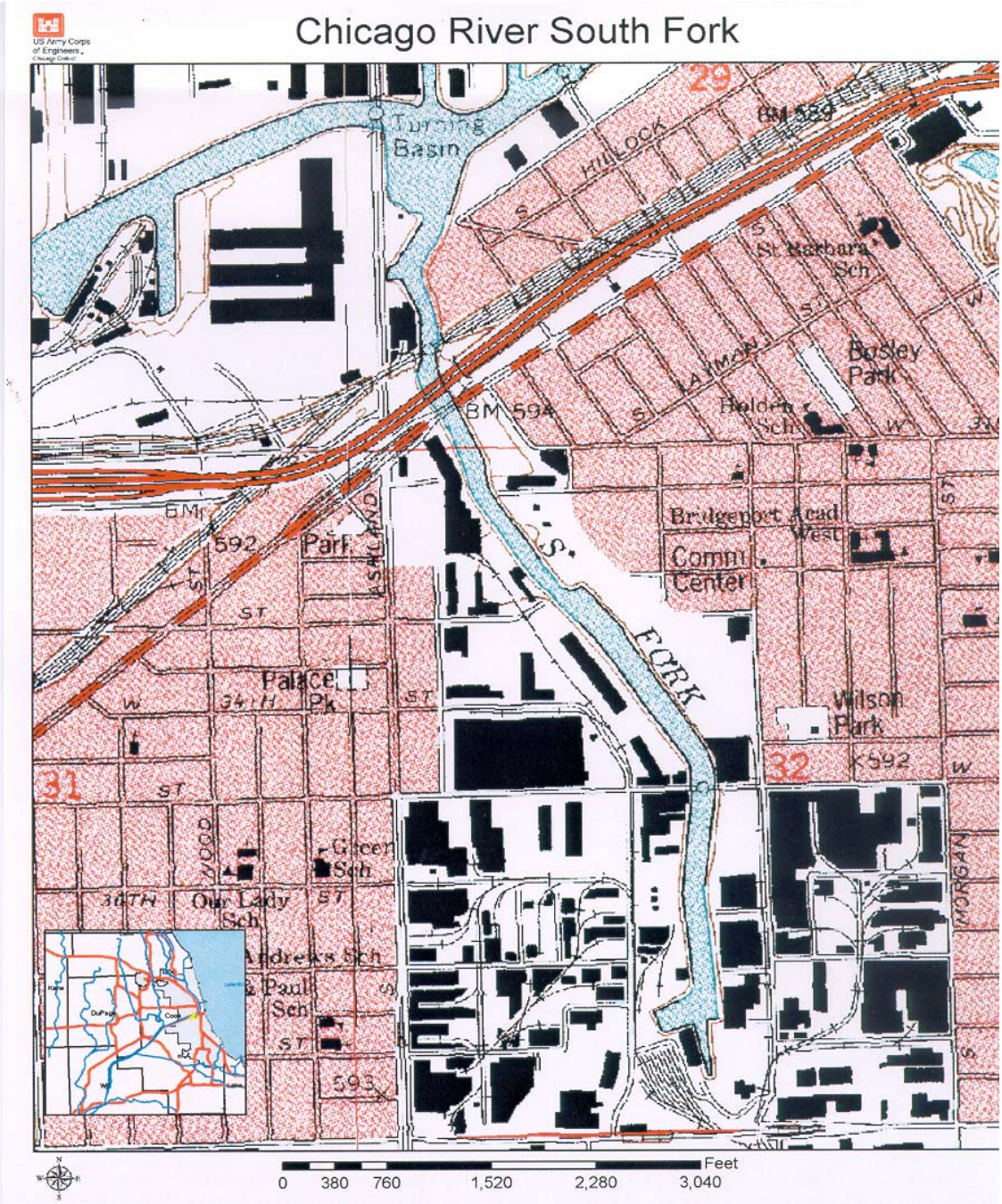


Figure 1-2
Previous Sampling Locations

Source: 2003 USACE SOW

1.3 Scope of Work

CDM was contracted on December 19, 2003 by USACE to conduct sediment sampling and laboratory analysis at South Fork South Branch, Chicago River, Illinois.

The major objective of this sample collection and analysis effort is to assess whether the sediment in Chicago River (SFSB) is deemed to be hazardous per exceedance of TCLP and other hazardous waste criteria. The sampling project consisted of the collection of 13 sediment core and 5 grab samples along the length of the project area.

As part of the sediment sampling, CDM followed the Final Sampling and Analysis Plan (CDM 2004) that was approved by USACE in February, 2004. CDM completed the following tasks:

1. Conducted vibratory drilling (i.e., vibracoring) using a Rossfelder P-3 vibracore and collected a total of 13 sediment samples
2. Collected 5 grab samples from the top six inches of the sediment layer, using a standard ponar dredge.
3. Classified soils in the field according to the Unified Soil Classification System (USCS)
4. Prepared and submitted soil samples for laboratory analysis
5. Prepared data tables in tabular format
6. Prepared this report which includes the following:
    - Description of the site conditions encountered during work
    - Copies of field notes and boring logs
    - A map showing and identifying sample locations with a table including GPS coordinates
    - Color photographs of collected samples
    - Water surface elevation data for each day of sampling
    - Water depths at each sampling location
    - Sediment depth at each location (thickness of sediment layer)
    - Discussion of Data Quality Objectives (DQOs), including whether or not the DQOs were met

- Chain of Custody sheets
- A comparison of sediment core results to TCLP and other hazardous waste criteria.

This report is divided into four sections, including this introduction (Section 1). The remaining sections contain the following information:

- Section 2 - Description of methods and procedures used during the site investigation
- Section 3 - Results of the field investigation
- Section 4 - References used to prepare this report

Section 2
Field Investigation Methods and Procedures

2.1 Introduction

Sediment sampling was conducted along the length of the SFSB, Chicago River from April 20 through 22, 2004 and was performed in accordance with the CDM Sampling and Analysis Plan (SAP) dated January 30, 2004. A Health and Safety Plan (HASP) was prepared prior to the start of field activities and was included in the SAP.

2.2 Site Conditions

Subsurface conditions are described in Section 3.1, with coring logs and USCS classifications in **Appendix C**. Water surface elevations were calculated as described in Section 2.3.3.

SFSB was accessible to sampling at the planned locations. Weather conditions during sampling included partly cloudy to cloudy skies, with rain during the afternoon of April 20 that halted field work. Temperatures ranged from the upper 40s to upper 50s Fahrenheit (^{o} F).

2.3 Subsurface Sediment Investigation

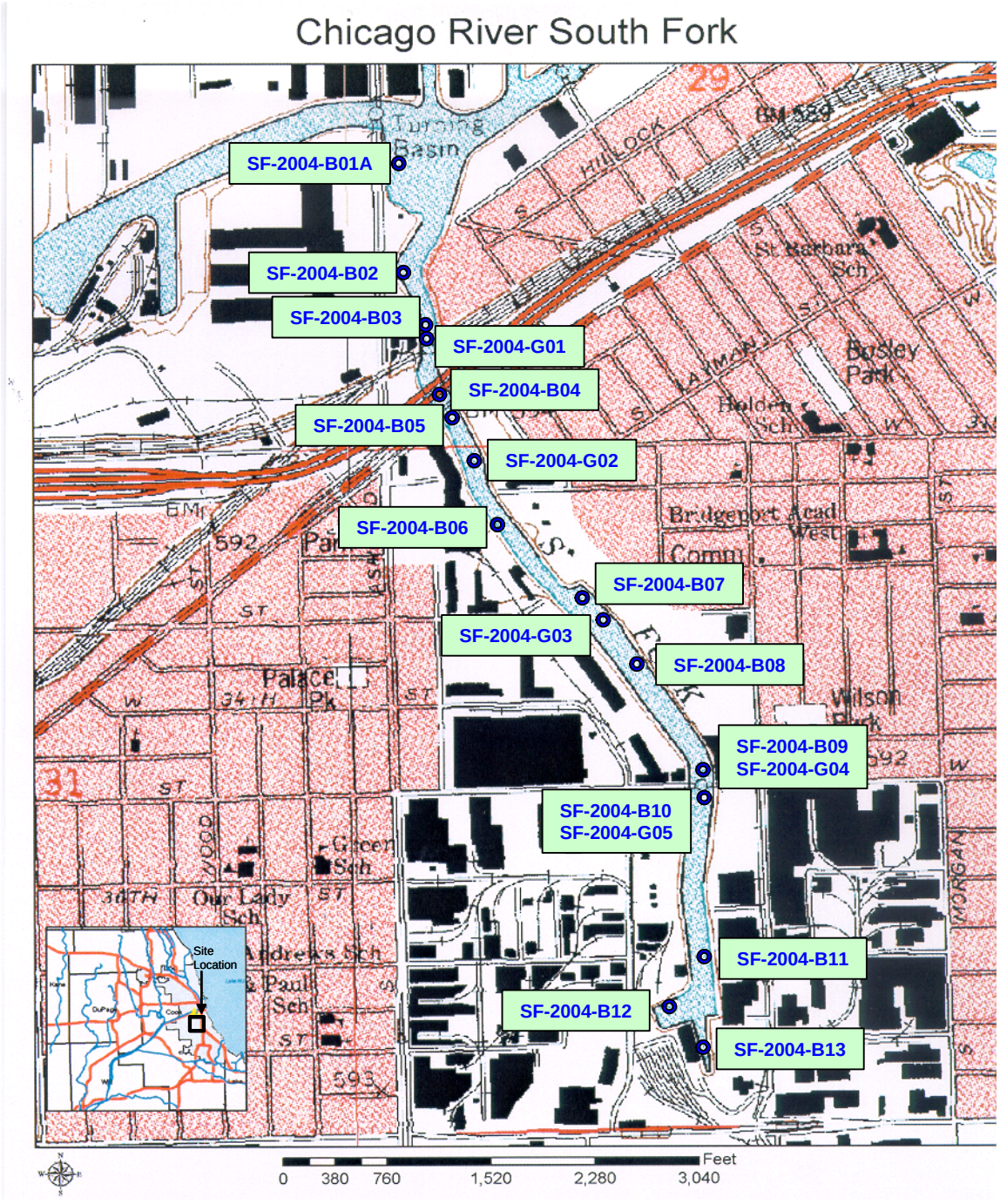
Thirteen sediment cores were completed along the length of the project site using a Rossfelder P-3 vibracore unit. Continuous core samples were collected from the top of the sediment to a depth equal to the thickness of the sediment layer in each sample location. Sediment core samples were advanced through the sediment layer until refusal was met. Five grab samples were collected from the top six inches of the sediment layer using a standard ponar dredge. Both core and grab sample locations are shown on **Figure 2-1.**

2.3.1 Utility Detection

Before intrusive work was initiated, CDM reviewed utility information provided by the Office of Underground Coordination and did not find any utilities that interfered with the scheduled sampling locations. CDM also contacted the Chicago Utility Alert Network, also known as Digger, to locate underground utilities that cross under the river along the length of the project. CDM met with Ameritech and ComEd and identified that Ameritech did not have utility conflicts at the sampling locations. The ComEd representative expressed concern over some utilities underneath the Archer bridge. After verification with ComEd engineers, it was concluded that the

Figure 2-1

Sediment Sampling Locations, April 2004



Map Source: Topo Zone 2003

sample locations SF-2004-B04 and SF-2004-B05 would not interfere with ComEd utilities, as long as they were not located directly beneath the Archer street bridge.

2.3.2 Equipment and Resources

Aqua Survey, Inc. of Flemington, New Jersey was retained to provide vibracoring services. Two small vessels were used to conduct field activities and were launched from Crowley's Yacht Yard located at 2500 South Corbett Street, Chicago, Illinois.

- The first vessel was the Navesink which is a pontoon work boat 24 feet long and 8 feet wide. The vessel is equipped with a 100 horsepower Johnson engine and was transported to the launch site on a trailer. The vessel houses the vibracore unit that was used to drill the test borings. The Navesink sampling vessel is pictured in **Figure 2-2**.

Figure 2-2
Sampling Vessel
South Fork South Branch, Chicago River

- The second vessel was the Monark which is a research vessel 21 feet long and 8 feet wide. The vessel is equipped with a 150 horsepower Yamaha engine and was transported to the launch site on a trailer. The vessel had a small cabin, was used to ferry people, and was used to process samples. **Figure 2-3** provides a representative photo of this support vessel.

Figure 2-3
Support Vessel
South Fork South Branch, Chicago River

The Trimble ProXRS global positioning system (GPS) on board the Navesink was used to position the vessels at each sampling location. Once positioned, a standard ponar dredge (**Figure 2-4**) was lowered into the water and used to collect sediment from the top six inches of the sediment layer for each of the five grab samples.

Figure 2-4
Standard Ponar Dredge Used to Collect Grab Samples
South Fork South Branch, Chicago River

Drilling was conducted using a Rossfelder P-3 vibracore unit with an attached core barrel, as represented in **Figure 2-5**. The vibrational energy produced by the vibracore unit allowed the core barrel to penetrate into the sediments. A core catcher was attached to the end of the barrel to hold the sediment inside the barrel when withdrawn from the sediments. Each of the 13 core barrels were lined with a clean clear flexible plastic liner.

Figure 2-5
Rossfelder P-3 Vibracore Unit with Attached Core Barrel
South Fork South Branch, Chicago River

2.3.3 Sampling Procedures

Sample locations were surveyed using a Trimble ProXRS GPS unit. Real-time differential GPS correction was automatically applied to survey points. The position of the sample points, as well as water surface elevation, water depth, penetration, and recovery, are listed in **Table 2-1**. Sampling locations SF-2004-B06 and SF-2004-B13 were adjusted slightly in the field and new locations were approved by the USACE representative on board. At sampling location SF-2004-B06, the vibracore penetrated the sediment approximately 2 feet but had no recovery. A second attempt was made approximately 25 to 30 feet from the first location and there was little to no penetration. The USACE representative suggested moving to the west bank of the

creek where sediment thickness was expected to be thicker. The exact grid locations for SF-2004-B13 were located under the walkway at the Racine Avenue Pump Station (RAPS). The USACE representative approved moving the sampling location to the canal.

Table 2-1

GPS Coordinates of Sample Points,

South Fork South Branch, Chicago River, April 2004

Sample ID #	Sample Description	Longitude/ Latitude	Water Surface Elevation[(a)] (feet)	Depth of Water (feet)	Penetration (feet)	Recovery (feet)	Date Measured
SF-2004-B01a	Core Sample	Long: 87º 39′54″.274 Lat: 41º 50′ 38″.125	577.07	6.6	12.9	10.5	21 April 2004
SF-2004-B02	Core Sample	Long: 87º 39′ 54″.668 Lat: 41º 50′ 29″.369	577.29	4.1	16.0	16	20 April 2004
SF-2004-B03	Core Sample	Long: 87º 39′ 52″.291 Lat: 41º 50′ 24″.639	577.27	12.5	11.1	9.6	20 April 2004
SF-2004-B04	Core Sample	Long: 87º 39′51″.983 Lat: 41º 50′22″.131	577.04	12.2	9.5	7.0	21 April 2004
SF-2004-B05	Core Sample	Long: 87º 39′ 49″.623 Lat: 41º 50′ 18″.211	577.09	11.4	10	7.3	21 April 2004
SF-2004-B06	Core Sample	Long: 87º 39′ 45″.744 Lat: 41º 50′ 10″.357	576.85	7.5	8.2	6.5	21 April 2004
SF-2004-B07	Core Sample	Long: 87º 39′ 36″.478 Lat: 41º 50′ 03″.788	576.90	3.7	13.8	7.5	21 April 2004
SF-2004-B08	Core Sample	Long: 87º 39′30″.410 Lat: 41º 49′ 57″.137	576.85	7.4	6.6	4.0	21 April 2004
SF-2004-B09	Core Sample	Long: 87º 39′ 46″.526 Lat: 41º 49′ 51″.171	576.83	12.0	9.0	6.0	21 April 2004
SF-2004-B10	Core Sample	Long: 87º 39′ 26″.522 Lat: 41º 49′ 48″.862	577.48	3.5	12.5	8.9	22 April 2004
SF-2004-B11	Core Sample	Long: 87º39′ 27.010 Lat: 41º 49′ 37″.697	577.26	4.5	11.0	7.0	22 April 2004
SF-2004-B12	Core Sample	Long: 87º 39′ 29″.549 Lat: 41º 49′ 33″.310	577.44	2.2	15.8	9.0	22 April 2004
SF-2004-B13	Core Sample	Long: 87º 39′26″.502 Lat: 41º 49′ 30″.173	577.39	16.5	5.5	2.0	22 April 2004
SF-2004-G01	Grab Sample	Long: 87º 39′ 52″.250 Lat: 41º 50′ 22″.803	577.27	NR	N/A	N/A	20 April 2004
SF-2004-G02	Grab Sample	Long: 87º 39′ 48″.116 Lat: 41º 50′ 15″.993	577.17	9.3	N/A	N/A	20 April 2004
SF-2004-G03	Grab Sample	Long: 87º 39′ 35″.357 Lat: 41º50′ 02″.876	576.97	4.0	N/A	N/A	21 April 2004
SF-2004-G04	Grab Sample	Long: 87º 39′ 46″.526 Lat: 41º 49′ 51″.171	576.83	12.0	N/A	N/A	21 April 2004
SF-2004-G05	Grab Sample	Long: 87º 39′ 26″.522 Lat: 41º 49′ 48″.862	577.48	3.5	N/A	N/A	22 April 2004

(a) – Water surface elevation is given relative to National Geodetic Vertical Datum 1929 (NGVD)

NR = not recorded; NA = not applicable

Depth of water was determined using a tape measure. Water surface elevation for each of the sampling locations was calculated through interpolation between several gauging stations. Water surface elevations at the Willow Springs gauge and the Chicago River Controlling Works (CRCW)-River gauge were provided by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). Water surface elevations were provided in "feet City of Chicago Datum (CCD)." The water surface elevation at the mouth of SFSB was determined by interpolating between these two stations. Additional water surface elevations had been collected at the Racine Avenue Pump Station. The sampling location water surface elevations were calculated by interpolating the water surface elevations at the mouth of the SFSB and at the Racine Avenue Pump Station. Water surface elevations were then converted from CCD to NGVD and are recorded in **Table 2-1**. Water surface elevation data provided by MWRDGC are presented in **Appendix A**.

Once the core samples were brought to the surface, the plastic core liner was extruded from the core barrel and the sediments were prepared for collection. Color photographs of each sample were taken and are located in **Appendix B**.

A CDM engineer classified the sediments according to the USCS (ASTM D2487-00) and CDM Standard Operating Procedure (SOP) 3-5, *Lithologic Logging*, by recording the classification on a field boring log form (see **Appendix C** for completed forms). The sediment samples were also screened in the field by the CDM engineer with a photoionization detector (PID) to detect the presence of volatile organic compounds (VOCs). Sediment from each discrete sample interval was placed in a zip lock bag, and a PID reading was taken after approximately 5 minutes.

Samples to be submitted for VOC and TCLP VOC analysis were prepared by filling an unpreserved 4-ounce glass jar with no headspace. The region of the sub-sample that produced the highest PID reading was chosen for VOC analysis.

Samples for bulk chemistry analysis and TCLP and hazardous waste analysis, with the exception of samples analyzed for VOCs, were submitted after compositing the sub-samples in a decontaminated stainless steel bowl and filling 9-ounce amber glass jars containing no preservatives. The sediment sample that was selected for analytical testing was based on the highest PID reading within that core. The depth of the 2-foot interval chosen for analytical sampling was recorded. Sediment within the chosen 2-foot interval was homogenized by mixing in a clean stainless steel bowl, then placed into sample jars. During the onset of sampling, core samples SF-2004-B01 and SF-2004-B02 were collected and the length of the core was homogenized. The USACE representative on board noted that the 2-foot interval with the highest PID reading should be homogenized, not the entire length of the core. CDM returned to location SF-2004-B01 and collected another sample (SF-2004-B01A), which was submitted for analysis in place of SF-2004-B01. Re-sampling was not performed at location SF-2004-B02.

Grab samples were homogenized at each sampling location using decontaminated stainless steel mixing equipment. The homogenized grab samples were analyzed for bulk chemistry parameters.

Tables identifying which samples were analyzed by which analytical tests are shown in **Tables 2-2 and 2-3**.

Table 2-2

Bulk Chemistry Parameters and Number of Samples Submitted

South Fork South Branch, Chicago River, April 2004

Parameter	Analysis Method	SF-2004-B01A	SF-2004-B02	SF-2004-B03	SF-2004-B04	SF-2004-B05	SF-2004-D05 [g]	SF-2004-B06	SF-2004-B07	SF-2004-B08	SF-2004-B09	SF-2004-B10	SF-2004-B11	SF-2004-B12	SF-2004-B13	SF-2004-G01	SF-2004-G02	SF-2004-G03	SF-2004-G04	SF-2004-G05
Metals (f)	6010B [a]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mercury	7471	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chromium (hexavalent, includes neutral leach)	Standard Method 3500	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cyanide, Total	EPA 335.4 [b]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Phosphorus	EPA 365.2 [c]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Oil & Grease	EPA 1664 [e]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ammonia Nitrogen	EPA 350.2 [c]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chemical Oxygen Demand	EPA 410.4 [b]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Organic Carbon	9060 [a]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Semivolatiles (SVOCs) (except PNAs)	8270 [a]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Polynuclear Aromatic Hydrocarbons (PNAs)	8270 selective ion monitoring (SIM)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Polychlorinated Biphenyls (PCBs)	8082 [a]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
% Volatile Solids	EPA 160.4 [c]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
% Total Solids	EPA 160.3 [c]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Volatiles (VOCs)	8260B [a]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Particle-Size Analysis w/hydrometer	ASTM D421-85 ASTM D422 [d]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Specific Gravity of Soil Solids by Water Pycnometer	ASTM D854-00 [d]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Notes: (a) EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition
(b) EPA 600/R-93-100, Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993
(c) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
(d) Annual book of American Society for Testing and Materials Standards (ASTM) Section 4, 2003
(e) EPA 821/B-94-004b, Method 1664: N-Hexane Extractable Material (HEM) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM) by Extraction and Gravimetry (Oil and Grease and Total Petroleum Hydrocarbons) April 1995

(f) Metals: arsenic, barium, cadmium, copper, lead, mercury, nickel, selenium, silver, and zinc.
(g) Duplicate of sample SF-2004-B05

Table 2-3

TCLP and Hazardous Waste Parameters and Number of Samples Submitted

South Fork South Branch, Chicago River, April 2004

Parameter	Analysis Method (a)	SF-2004-B01A	SF-2004-B02	SF-2004-B03	SF-2004-B04	SF-2004-B05	SF-2004-D05 (b)	SF-2004-B06	SF-2004-B07	SF-2004-B08	SF-2004-B09	SF-2004-B10	SF-2004-B11	SF-2004-B12	SF-2004-B13	SF-2004-G01	SF-2004-G02	SF-2004-G03	SF-2004-G04	SF-2004-G05
TCLP Volatiles	1311/8260B	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
TCLP RCRA Metals	1311/6010B/7000A	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
TCLP Semivolatiles	1311/8270C	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
TCLP Herbicides and Pesticides	1311/8151/8081A	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Soil and Waste pH	9045C	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Flash Point	1010	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Reactive Cyanide	Chapter 7, 7.3.3.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Reactive Sulfide	Chapter 7, 7.3.4.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Paint Filter	9095A	X	X	X	X	X	X	X	X	X	X	X	X	X	X					

Notes:
(a) EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition
(b) Duplicate of sample SF-2004-B05
TCLP = Toxicity Characteristic Leaching Procedure

2.3.4 Investigation Derived Waste

All sampling and processing equipment that came into direct contact with the sediment samples were decontaminated between sampling locations. The sediment catcher located at the bottom of the vibracore, the ponar dredge, and the mixing bowls were thoroughly decontaminated between each sample with a Liquinox® solution.

Investigation-derived waste (IDW) produced during sampling was handled in accordance with CDM SOP 2-2, *Guide to Handling of Investigation-Derived Waste*. All non-aqueous waste generated, such as personal protective equipment (PPE), were placed into high-density polyethylene (HDPE) bags. The solid waste generated during field activities was disposed of in conventional waste containers as non-hazardous waste. All aqueous IDW, rinsate, and extra sediment volume collected during field activities were returned to the waterway in the location where it had been collected.

2.4 Laboratory Analysis

The samples were sent on the day of collection via overnight courier to Mitkem Corporation of Warwick, Rhode Island. Mitkem Corporation has current USACE, North Western Division (NWD) laboratory validation.

One hundred forty-five containers of sediment were sent to the laboratory for analysis. All grab samples were analyzed for bulk chemistry, consisting of the parameters and analysis methods listed in **Table 2-2**. Sediment core samples were collected and analyzed for the bulk chemistry parameters listed in **Table 2-2**, as well as the TCLP and hazardous waste parameters listed in Table 2-3. Laboratory analytical results are identified in **Appendix D** and summarized in Section 3.2**.**

Section 3
Results of the Field Investigation

3.1 Subsurface Conditions

Subsurface conditions at the site are described based on field observations. Boring logs (refer to **Appendix C**) were compiled using data collected during the on-site subsurface investigation.

Sediment typically consisted of clay that was wet, soft, had little fine sand and silt, and contained organics. Sandy material was present in SF-2004-B04 (shallow), SF-2004-B07 (shallow), SF-2004-B08 (shallow and deep), SF-2004-B09 (shallow), SF-2004-B10 (predominant), SF-2004-B11 (shallow), and SF-2004-B13. Gravel was present in much of SF-2004-B06.

Most sediment had an organic odor, with some locations exhibiting a hydrocarbon odor. The sediment color was typically black, as seen in the photographs shown in **Appendix B**. An oily sheen was observed in core SF-2004-B06 and grab sample SF-2004-G05. Hair and foil were present in many cores, while trash, wood, glass, and bone fragments were present in a small number of cores.

3.2 Analytical Sediment Results

Table 3-1 lists bulk chemistry compounds that were detected in the sediment samples. **Table 3-2** is a summary of TCLP and hazardous waste characterization results.

Consistent with previous sample results in 1994, 1995, and 2000, polynuclear aromatic hydrocarbons (PNAs or PAHs) were detected in many samples in the parts per million (ppm) range. Other semi-volatile organic compounds (SVOCs), VOCs, polychlorinated biphenyls (PCBs), oil and grease, and metals were detected in the samples.

Sediment analytical results were compared to EPA TCLP regulatory levels. TCLP and Hazardous Waste regulatory levels as well as maximum concentrations detected are listed in **Table 3-2.** Parameters that have exceeded the regulatory criteria appear in **"BOLD"**. See **Appendix D** for a complete list of analytical results with comparisons to regulatory levels. None of these detections exceed EPA TCLP regulatory levels; in fact, none were within an order of magnitude of the criteria. Ignitability (flash point) was identified in one sample: SF-2004-B02 at 124 degrees Fahrenheit. Cyanide and sulfide reactivity were compared to EPA SW-846 levels; reactive cyanide was not detected, but there were eleven samples with reactive sulfides results above the listed criteria of 500 mg/kg (EPA SW-846 Chapter 7 Section 7.3.4.2). Total PCB levels were compared to the Toxic Substances Control Act (TSCA) regulatory level and there were no exceedances. Regulatory criteria for pH were not exceeded for any samples and there were no regulatory criteria available for the paint filter test.

Table 3-1

Summary of Bulk Chemistry Results

	Analyte	Number of Detections	Number of Samples Analyzed[a]	Minimum Concentration Detected	Maximum Concentration Detected	Location of Highest Detection[b]	Average Concentration or Result
VOCs (µg/kg) by EPA 8260B	Vinyl Chloride	1	19	19	19	B03	11 [e]
	Acetone	19	19	8 J	2700	B09	543
	Carbon disulfide	11	19	6	37 J	B05	13 [e]
	Methylene chloride	15	19	2 JB	63 DJB	B12DL	9 [e]
	2-Butanone (MEK)	15	19	15	1500 E	D05	259 [e]
	cis-1,2-Dichloroethene	1	19	6 J	6 J	B03	10 [e]
	Chloroform	12	19	1 J	26 DJ	B12DL	9 [e]
	Benzene	11	19	4 J	31	B02	11 [e]
	Toluene	16	19	2 J	8000 D	G02DL	471 [e]
	Chlorobenzene	7	19	2 J	16	B13	9 [e]
	Ethylbenzene	10	19	6 J	87	B12	25 [e]
	o-xylene	13	19	3 J	630 E	B02	107 [e]
	p-xylene	13	19	1 J	620	B02	154 [e]
	Xylenes (total)	13	19	4 J	1200	B02	275 [e]
	Isopropylbenzene	12	19	2 J	64	B12	25 [e]
	n-Propylbenzene	11	19	3 J	190	B12	52 [e]
	1,3,5-Trimethylbenzene	16	19	2 J	770	B12	192 [e]
	1,2,4-Trimethylbenzene	17	19	1 J	2000 E	B12	222 [e]
	sec-butylbenzene	11	19	4 J	240	B12	77 [e]
	Cymene	16	19	2 J	820 E	B12	154 [e]
	1,4-Dichlorobenzene	9	19	4 J	200	B10	37 [e]
	n-Butylbenzene	14	19	3 J	620	B12	178 [e]
	1,2-Dichlorobenzene	2	19	3 J	11	B05	10 [e]
	Naphthalene	18	19	3 J	670	B10	143 [e]
SVOCs (µg/kg) by EPA 8270C (except PNAs)	Phenol	1	19	110 J	110 J	B02	2630 [e]
	1,4-Dichlorobenzene	14	19	110 J	2800	B11	1876 [e]
	1,2-Dichlorobenzene	4	19	130 J	550 J	B06	2405 [e]
	4-Methylphenol	9	19	250 J	5200	G02	2132 [e]
	4-Chloroaniline	1	19	1900	1900	B02	2724 [e]
	Dibenzofuran	16	19	83 J	6400	B13	2408 [e]
	Carbazole	11	19	500	9900 D	B13DL	3363 [e]
	Di-n-butylphthalate	2	19	83 J	560 J	B02	2635 [e]
	Butylbenzylphthalate	3	19	340 J	880 DJ	G02DL	2646 [e]
	bis(2-Ethylhexyl)phthalate	18	19	2500	41,000	B06	17489 [e]
	Di-n-octylphthalate	5	19	370 J	1300 DJ	B02DL	2324 [e]
Metals (mg/kg)	Arsenic	19	19	2.6	35.2	B09	17.3
	Barium	19	19	43	659	B12	349
	Cadmium	19	19	0.89	28.5	B01a	11.6
	Chromium	19	19	30.8 N	4440 N	B02	688
	Copper	19	19	79.8	534	D05	303
	Lead	19	19	136	2820	B09	1233
	Nickel	19	19	11.4	247	D05	95.9
	Selenium	19	19	0.63 B	6.8	D05	3.59
	Silver	18	19	2.3	70.4	B07	22.2 [e]
	Zinc	19	19	207	6600	B09	2690
	Mercury	19	19	0.72	15.9	B10	6.34

Table 3-1 (Continued)

Summary of Bulk Chemistry Results

	Analyte	Number of Detections	Number of Samples Analyzed[a]	Minimum Concentration Detected	Maximum Concentration Detected	Location of Highest Detection[b]	Average Concentration or Result
PNAs by 8270 SIM	Naphthalene	19	19	120	8600 D	B13DL	2157
	2-Methylnaphthalene	19	19	170	18,000	D05	6024 [d]
	Acenaphthylene	19	19	47	2600	B01A	609
	Acenaphthene	19	19	180	8,900	B11	2682 [d]
	Fluorene	19	19	220	9100 D	B13	3448 [d]
	Phenanthrene	19	19	2000	100,000 D	G01DL	25658 [d]
	Anthracene	19	19	370	12,000 D	B13DL	4201 [d]
	Fluoranthene	19	19	3,800	110,000 D	B13DL	30316 [d]
	Pyrene	19	19	3,100	93,000 D	B13DL	23374 [d]
	Benzo(a)anthracene	19	19	1100	34,000 D	B13DL	10168 [d]
	Chrysene	19	19	1100	60,000 D	B13DL	15379 [d]
	Benzo(b)fluoranthene	19	19	1400	40,000 D	B13DL	12647 [d]
	Benzo(k)fluoranthene	19	19	470	15,000 D	B13DL	4319 [d]
	Benzo(a)pyrene	19	19	1000	28,000 D	B13DL	8442 [d]
	Indeno(1,2,3-cd)pyrene	19	19	450	16,000 D	B13DL	3490 [d]
	Dibenz(a,h)anthracene	19	19	140	3800	B13	1026
	Benzo(g,h,i)perylene	19	19	1200	18,000 D	B13DL	3336 [d]
PCBs (µg/kg)	Aroclor-1248	17	19	100 P	8000	B10	3233 [e]
	Aroclor-1260	18	19	360	3300 P	B03	1607 [e]
Other Inorganics (mg/kg unless noted)	Total volatile solids (wt %)	19	19	1.8 B	46 B	B09	16.3
	Total Solids (%)	19	19	36	79	B13	52.8
	Phosphorus, Total (as P)	17	19	540	17,000	D05	5787 [e]
	Total organic carbon	19	19	5900	>12,000	(c)	97205
	Nitrogen, ammonia	19	19	62	13,000	B02	2891
	Chemical oxygen demand	16	19	430	6,600	D05	2221
	Chromium, hexavalent	0	19	ND	ND	ND	N/A
	Oil & Grease, total	19	19	1300	20,000	B02	7984
	Cyanide	17	19	0.49 BN	9.3 N	B02/ B09	3.26 [e]
Particle Size (%)	Gravel	19	19	0	41.2	B06	5.5
	Coarse Sand	19	19	0	19.5	B13	2.9
	Medium Sand	19	19	1.6	47.1	B13	8.8
	Fine Sand	19	19	6.7	86.7	G05	38.6
	Silt	19	19	0.1	53.1	B04	25.9
	Clay	19	19	2.9	37	B04	18.1
Specific Gravity	Specific Gravity	14	14	1.44	2.57	G05	2.09

Data have not been validated, but a quality assessment has been performed by USACE (See Appendix E)

Target analytes not listed were not detected in any samples. Full data tables are in Appendix D.

(a) Including one field quality control duplicate sample

(b) Sample identification name has SF-2004- preceeding the location. B = (boring) core sample

(c) Several samples with TOC results > 12,000

(d) PNA results by method 8270C were used when method 8270C SIM results exceeded calibration range

(e) Average concentration incorporates reporting limit value for non-detected analytes

B = detected in the blank sample (except for metals/inorganics, where B = concentration below reporting limit)

D = diluted

DL = sample analyzed after dilution

E = exceeds calibration range (for metals E = estimated concentration due to interference)

J = estimated concentration

N = sample recovery outside of control limits

N/A = Not Applicable

ND = No Detections

P = the difference for detected concentration of an Aroclor target analyte is greater than 25% between the two GC columns.

Table 3-2
Summary of TCLP and Hazardous Waste Characterization Results

	Analyte	Number of Detections	Number of Samples Analyzed[a]	Minimum Concentration Detected	Maximum Concentration Detected	Location of Highest Detection[b]	TCLP and Hazardous Waste Criteria	Average Concentration
TCLP VOCs (µg/L)	Vinyl Chloride	0	14	ND	ND	N/A	200	N/A
	1,1-Dichloroethene	0	14	ND	ND	N/A	700	N/A
	2-Butanone	12	14	2 J	38	B08	200,000	16 (e)
	Chloroform	0	14	ND	ND	N/A	6,000	N/A
	Carbon Tetrachloride	0	14	ND	ND	N/A	500	N/A
	1,2-Dichloroethane	0	14	ND	ND	N/A	500	N/A
	Benzene	0	14	ND	ND	N/A	500	N/A
	Trichloroethene	0	14	ND	ND	N/A	500	N/A
	Tetrachloroethene	0	14	ND	ND	N/A	700	N/A
	Chlorobenzene	1	14	9	9	B13	100,000	5.3 [d]
TCLP SVOCs (µg/L)	1,4-Dichlorobenzene	1	14	2 J	2 J	B13	7,500	9.4 [d]
	2-Methylphenol	0	14	ND	ND	N/A	200,000	N/A
	4-Methylphenol	1	14	2 J	2 J	B13	200,000	9.4 [d]
	Hexachloroethane	0	14	ND	ND	N/A	3,000	N/A
	Nitrobenzene	0	14	ND	ND	N/A	2,000	N/A
	Hexachlorobutadiene	0	14	ND	ND	N/A	500	N/A
	2,4,6-Trichlorophenol	1	14	1 J	1 J	B13	2,000	9.3 [d]
	2,4,5- Trichlorophenol	1	14	1 J	1 J	B13	400,000	18.6 [d]
	2,4-Dinitrotoluene	1	14	1 J	1 J	B13	130	9.3 [d]
	Hexachlorobenzene	0	14	ND	ND	N/A	130	N/A
	Pentachlorophenol	0	14	ND	ND	N/A	100,000	N/A
	Pyridine	1	14	27	27	B13	5,000	11.2 [d]
TCLP Pesticides	gamma-BHC (Lindane)	0	14	ND	ND	N/A	400	N/A
	Heptachlor	0	14	ND	ND	N/A	8	N/A
	Heptachlor epoxide	0	14	ND	ND	N/A	8	N/A
	Endrin	0	14	ND	ND	N/A	20	N/A
	Methoxychlor	0	14	ND	ND	N/A	10,000	N/A
	Toxaphene	0	14	ND	ND	N/A	500	N/A
	Chlordane	0	14	ND	ND	N/A	30	N/A
TCLP Herbicides	2,4-D (Dichlorophenoxyacetic Acid)	0	14	ND	ND	N/A	10,000	N/A
	Silvex (2,4,5-TP)	0	14	ND	ND	N/A	1,000	N/A
TCLP Metals (µg/L)	Arsenic	14	14	9.7 B	53	B09	5,000	27.3
	Barium	14	14	595 E	944 E	B09	100,000	680
	Cadmium	14	14	2.5 B	9	B06	1,000	4.1
	Chromium	14	14	10.2 B	126	B06	5,000	40.7
	Lead	13	14	7.4 B	154	B07	5,000	56.3 [d]
	Mercury	3	14	0.15 B	0.22 B	B12	200	0.11 [d]
	Selenium	2	14	12 B	12.4 B	B04	1,000	9.5 [d]
	Silver	14	14	10.5 B	31	B06	5,000	16.8
Cyanide (mg/kg)	Reactive Cyanide	0	13	ND	ND	N/A	250 [c]	N/A
Sulfide (mg/kg)	**Reactive Sulfide**	**13**	**13**	**42**	**8,200**	**B02**	**500 [c]**	**2664**
Flashpoint	**Ignitability (degrees F)**	**1**	**13**	**ND**	**124**	**B02**	**<140°**	**N/A**
pH	pH (standard units)	14	14	7.6	8.5	B10	≤2 or ≥12.5	8
Paint Filter	Paint Filter (Free liquid) (mL/100 g)	3	13	4	13	B11	N/A	2.8 [d]

Data have not been validated, but a quality assessment has been performed by USACE

(a) Including one field quality control duplicate sample
(b) Sample identification name has SF-2004- preceeding the location. B = (boring) core sample
(c) Per SW-846 Chapter 7 Section 7.3.3.2, 7.3.4.2.
(d) Average concentration includes reporting limit value for undetected samples
B = detected in the blank sample (except for metals/inorganics, where B = concentration below reporting limit)
E = exceeds calibration range (for metals E = estimated concentration due to interference)
J = estimated concentration
N/A = Not Applicable

3.3 Quality Assurance/Quality Control (QA/QC)

CDM performed all field sampling activities in accordance with the USACE-approved SAP (CDM 2004) that included project-specific QA/QC requirements. Decontamination, sampling methods, and all other procedures used during field work were conducted as described in the SAP. A USACE representative was onsite observing field work during the entire sampling event.

As discussed in Section 2.3.3, core samples SF-2004-B01 and SF-2004-B02 were collected and the length of the core was homogenized. The USACE representative on board noted that the 2-foot interval with the highest PID reading should be homogenized, not the entire length of the core; however, CDM returned to location SF-2004-B01 because it had a higher PID reading at depth compared to the shallower intervals and collected another sample (SF-2004-B01A) that was submitted for analysis in place of SF-2004-B01. The PID readings from various sample depths at SF-2004-B02 were not significantly different so re-sampling was not performed.

Data quality assessment was not part of the CDM SOW for this project. Rather, data quality assessment has been performed by USACE and a Memorandum for Record detailing this assessment is included in **Appendix E** of this final report. USACE concluded the following:

- Matrix interference existed for SVOCs
- The reported data meet the specifications of the SOW
- The data are deemed useable for the intended purposes, with certain data qualified as estimated concentrations

Mitkem Corporation recorded sample receipt information such as cooler or sample temperature, condition of sample containers, the presence of custody seals, and chain-of-custody documentation. Cooler custody seals were present and intact upon arrival at the laboratory, cooler temperatures were within $4^{o} \pm 2^{o}$, and no login discrepancies were found.

The following QC observations are made following review of the sample delivery group (SDG) case narrative, field QC sample results, and USACE Data Quality Analysis:

- LCS, surrogate, and MS/MSD percent recoveries used to assess accuracy encountered matrix interferences as discussed in the SDG narrative (**Appendix D**) and further below. Duplicate relative percent difference (RPD) results used to assess precision were typically within criteria as summarized in the SDG narrative; field duplicate results are discussed further below.

- The majority of test methods employed by the laboratory corresponded to those listed in the SOW and CDM SAP, with the exception of hexavalent chromium, total cyanide, ammonia nitrogen, chemical oxygen demand, % total solids and total organic carbon. Since several methods listed in the Sampling plan applied only to aqueous media, (COD by 410.4, Ammonia Nitrogen by 350.2, Hexavalent Chromium by 3500 and TOC by 9060) Mitkem analyzed the samples by equivalent methods for sediment or soil matrix for the applicable target parameters. COD and Ammonia Nitrogen tests were performed in accordance with CFR 40 Part 136 Subchapter D. Mitkem analyzed the samples for TOC in soil by the Loyd Kahn modification to method 415.1, which specifically addresses soil samples, and analyzed hexavalent chromium by SW-846 Methods 3060/7196A, which also specifically addresses soil samples.

- For most samples, dilution was required for VOCs, SVOCs, and PNAs analyses because of the relatively high concentrations identified in these sediment samples. Dilution was required to obtain results within the calibration range. This increased the reported detection limit for non-detect results for these samples. In some cases, this affected the ability of certain analytes for certain QC tests to be detected.

- One matrix spike (MS)/matrix spike duplicate (MSD) sample was collected in the field for analysis to help assess site-specific matrix interference. Matrix interference was identified and described by the laboratory in the sample delivery group (SDG) narrative (**Appendix D**) for VOCs, SVOCs, PCBs, and inorganics (chromium and cyanide). Some MS and MSD recoveries were low, while others were high, not clearly indicating a particular directional bias. Because laboratory control standard (LCS) results were typically within QC limits but MS and/or MSD results were not in certain cases, this indicates matrix interference rather than analytical error.

- One holding time was missed for VOCs, for sample SF-2004-B03 for the third dilution. The initial two analyses were completed within holding times, but due to the multiple dilutions required the final analysis was performed slightly outside of the holding time.

- The holding time of 24 hours, as listed in the SAP was exceeded for 7 flashpoint samples, 4 soil and waste pH samples, 9 reactive cyanide samples and 7 reactive sulfide samples. There is no specific 24-hour holding time listed in the analytical method for these four EPA SW-846 methods. Instead, the analytical method for EPA SW-846 Method 9045, 7.3.3.2, and 7.3.4.2, states that samples should be analyzed as soon as possible (while maintaining the samples under refrigeration and in the dark, which occurred). CDM typically interprets this to mean 24 hours, which is what was included in Table 6 of the SAP (January 2004); however, 24 hours is not a specific EPA requirement.

For flashpoint, the CDM SAP Table 6 holding time was in error because no holding time, not even "as soon as possible," is listed in the analytical method (SW 1010).

According to EPA MICE (Methods Information Communication Exchange), one week is generally considered the acceptable holding time for pH on a soil/solid sample. The same one week time period could also be reasonably applied to flashpoint analyses, as long as the samples were stored in the recommended manner. Holding times for the total analysis methods could be applied to the reactivity methods. Based on the information from the EPA MICE service, one week would be considered acceptable for the pH, flashpoint and reactive sulfide analyses, with two weeks considered reasonable for reactive cyanide because the total cyanide holding time is 14 days (SAP Table 5).

Mitkem performed all pH and flashpoint analyses within one week from sample collection. The reactive sulfide analyses were performed within 14 days or less from collection, which is within a factor of two of the EPA MICE-suggested one week holding time for the total sulfide test. Data validation guidelines generally consider analyses performed within a factor of two of the holding time to be usable as estimates. Because EPA has serious doubts about the reliability of the reactivity analyses described in EPA SW-846 Chapter 7, the data should be considered to be estimates ("J" qualifier) regardless of holding time.

Reactive cyanide analyses were performed within 14 days with the exception of three samples analyzed on the 15th day. All samples analyzed within 14 days are within the EPA's recommended holding time for the total cyanide analysis method. The three samples analyzed on the 15th day were analyzed within a factor of two of the holding time, and should also be considered estimates in the same manner as reactive sulfide. Total cyanide analyses were also performed on these samples and the total cyanide results ranged from 0.49 to 9.3 mg/kg, all below the SW-846 Section 7.3.3.2 interim threshold level of 250 mg/kg.

- Actual detection limits exceeded the required detection limit for several test methods. For VOCs, the detection limits generally were not met due to elevated moisture in the sediment samples that caused elevated reporting limits. The required detection limits for SVOCs and PCBs were not met due to samples that were analyzed at dilution, as discussed previously. These samples required analysis at dilution due to concentrations of target and non-target analytes.

- Surrogate recoveries in some samples were high for VOCs, most likely due to matrix interference; however, when reanalyzed at dilution, results were typically within QC limits.

- SVOC surrogate recoveries in most of the samples were within QC limits, except for 1 or 2 of the 6 surrogates in about one-third of the samples. PCB surrogate recoveries were within QC limits except for one surrogate with co-eluting (i.e., overlapping) interferences.

- TCLP QC results for virtually all analyses were within QC limits.

- One field duplicate sediment sample (SF-2004-D05) was collected to assess the homogeneity of sediment. It was collected from the same homogenization bowl as SF-2004-B05, except the sub-sample for VOC analysis was collected prior to homogenization. Results generally showed the same analytes detected in both the original and duplicate, with concentrations generally within two times of each other, indicating some heterogeneity exists. Results for VOCs were slightly more variable, which could be expected considering subsamples for VOCs were not homogenized to avoid volatilization loss.

- Other field QC samples such as trip blanks, USACE QA samples, and field/rinsate blank samples were not included in the scope of work for this project and are not considered necessary for the proposed sampling plan along the length of the project area, based on the size and the needs of the project. USACE Engineer Manual EM 200-1-6 (Chemical Quality Assurance for Hazardous, Toxic, and Radioactive Waste [HTRW] Sites) Section 1-7 (Omission of QA Samples) allows this for certain projects.

Regarding analytes and concentrations detected, sample results were generally comparable (i.e., had similar analytes detected, had concentrations within an order of magnitude, and had no apparent major outliers) both amongst each other and compared to previous sampling results from 1994 to 2000.

The objective of this sample collection and analysis effort was to assess whether the sediment in Chicago River (SFSB) is deemed to be hazardous per exceedance of TCLP and other hazardous waste criteria. According the USACE Data Quality Assessment, the TCLP data are generally within the QC limits and the analyte concentrations in the sediment were significantly less than the TCLP regulatory limits. The laboratory results appear to be suitable for identifying hazardous toxicity characteristics within the sediment samples. However, caution should be taken when using the results to determine hazardous waste characteristics such as ignitability, reactivity, or corrosivity.

Section 4
References

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Appendix A

Water Surface Elevation Data

Start:	17-Apr-2004 00:00	23-Apr-2004 00:00			
Interval:	0 00:15				
	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
17-APR-2004 00:00:00	**-0.73**	**17-APR-2004 00:00:00**	**-1.97**	**17-APR-2004 00:00:00**	**-2.10**
17-APR-2004 00:15:00	-0.80	17-APR-2004 00:15:00	-1.93	17-APR-2004 00:15:00	-2.10
17-APR-2004 00:30:00	-0.73	17-APR-2004 00:30:00	-1.97	17-APR-2004 00:30:00	-2.07
17-APR-2004 00:45:00	-0.80	17-APR-2004 00:45:00	-1.93	17-APR-2004 00:45:00	-2.07
17-APR-2004 01:00:00	-0.73	17-APR-2004 01:00:00	-1.97	17-APR-2004 01:00:00	-2.10
17-APR-2004 01:15:00	-0.93	17-APR-2004 01:15:00	-1.93	17-APR-2004 01:15:00	-2.13
17-APR-2004 01:30:00	-0.73	17-APR-2004 01:30:00	-2.00	17-APR-2004 01:30:00	-2.13
17-APR-2004 01:45:00	-0.93	17-APR-2004 01:45:00	-1.93	17-APR-2004 01:45:00	-2.07
17-APR-2004 02:00:00	-0.93	17-APR-2004 02:00:00	-2.00	17-APR-2004 02:00:00	-2.07
17-APR-2004 02:15:00	-0.93	17-APR-2004 02:15:00	-1.93	17-APR-2004 02:15:00	-2.07
17-APR-2004 02:30:00	-0.93	17-APR-2004 02:30:00	-1.93	17-APR-2004 02:30:00	-2.07
17-APR-2004 02:45:00	-0.93	17-APR-2004 02:45:00	-2.00	17-APR-2004 02:45:00	-2.07
17-APR-2004 03:00:00	-0.87	17-APR-2004 03:00:00	-1.97	17-APR-2004 03:00:00	-2.13
17-APR-2004 03:15:00	-0.80	17-APR-2004 03:15:00	-2.00	17-APR-2004 03:15:00	-2.07
17-APR-2004 03:30:00	-0.73	17-APR-2004 03:30:00	-1.93	17-APR-2004 03:30:00	-2.13
17-APR-2004 03:45:00	-0.93	17-APR-2004 03:45:00	-1.93	17-APR-2004 03:45:00	-2.07
17-APR-2004 04:00:00	-1.13	17-APR-2004 04:00:00	-1.93	17-APR-2004 04:00:00	-2.07
17-APR-2004 04:15:00	-1.17	17-APR-2004 04:15:00	-1.90	17-APR-2004 04:15:00	-2.13
17-APR-2004 04:30:00	-0.80	17-APR-2004 04:30:00	-1.93	17-APR-2004 04:30:00	-2.07
17-APR-2004 04:45:00	-0.67	17-APR-2004 04:45:00	-1.93	17-APR-2004 04:45:00	-2.07
17-APR-2004 05:00:00	-0.60	17-APR-2004 05:00:00	-1.93	17-APR-2004 05:00:00	-2.17
17-APR-2004 05:15:00	-0.73	17-APR-2004 05:15:00	-1.87	17-APR-2004 05:15:00	-2.07
17-APR-2004 05:30:00	-0.80	17-APR-2004 05:30:00	-1.87	17-APR-2004 05:30:00	-2.13
17-APR-2004 05:45:00	-1.00	17-APR-2004 05:45:00	-1.87	17-APR-2004 05:45:00	-2.07
17-APR-2004 06:00:00	-0.80	17-APR-2004 06:00:00	-1.80	17-APR-2004 06:00:00	-2.07
17-APR-2004 06:15:00	-0.67	17-APR-2004 06:15:00	-1.93	17-APR-2004 06:15:00	-2.07
17-APR-2004 06:30:00	-1.13	17-APR-2004 06:30:00	-2.00	17-APR-2004 06:30:00	-2.07
17-APR-2004 06:45:00	-1.37	17-APR-2004 06:45:00	-1.97	17-APR-2004 06:45:00	-2.00
17-APR-2004 07:00:00	-1.20	17-APR-2004 07:00:00	-1.93	17-APR-2004 07:00:00	-2.00
17-APR-2004 07:15:00	-0.80	17-APR-2004 07:15:00	-1.93	17-APR-2004 07:15:00	-2.00
17-APR-2004 07:30:00	-1.07	17-APR-2004 07:30:00	-1.93	17-APR-2004 07:30:00	-2.00
17-APR-2004 07:45:00	-1.13	17-APR-2004 07:45:00	-1.90	17-APR-2004 07:45:00	-2.00
17-APR-2004 08:00:00	-0.47	17-APR-2004 08:00:00	-1.93	17-APR-2004 08:00:00	-2.00
17-APR-2004 08:15:00	-0.50	17-APR-2004 08:15:00	-1.87	17-APR-2004 08:15:00	-2.00
17-APR-2004 08:30:00	-0.93	17-APR-2004 08:30:00	-1.87	17-APR-2004 08:30:00	-2.00
17-APR-2004 08:45:00	-1.07	17-APR-2004 08:45:00	-1.87	17-APR-2004 08:45:00	-1.93
17-APR-2004 09:00:00	-1.27	17-APR-2004 09:00:00	-1.80	17-APR-2004 09:00:00	-2.07
17-APR-2004 09:15:00	-0.93	17-APR-2004 09:15:00	-1.87	17-APR-2004 09:15:00	-2.00
17-APR-2004 09:30:00	-0.33	17-APR-2004 09:30:00	-1.87	17-APR-2004 09:30:00	-2.20
17-APR-2004 09:45:00	-1.20	17-APR-2004 09:45:00	-1.87	17-APR-2004 09:45:00	-2.07
17-APR-2004 10:00:00	-0.73	17-APR-2004 10:00:00	-1.90	17-APR-2004 10:00:00	-2.07
17-APR-2004 10:15:00	-0.73	17-APR-2004 10:15:00	-1.87	17-APR-2004 10:15:00	-2.07
17-APR-2004 10:30:00	-0.73	17-APR-2004 10:30:00	-1.92	17-APR-2004 10:30:00	-2.07
17-APR-2004 10:45:00	-1.07	17-APR-2004 10:45:00	-2.00	17-APR-2004 10:45:00	-2.00
17-APR-2004 11:00:00	-0.60	17-APR-2004 11:00:00	-2.03	17-APR-2004 11:00:00	-1.97
17-APR-2004 11:15:00	-1.00	17-APR-2004 11:15:00	-2.00	17-APR-2004 11:15:00	-2.00
17-APR-2004 11:30:00	-0.80	17-APR-2004 11:30:00	-1.97	17-APR-2004 11:30:00	-2.00
17-APR-2004 11:45:00	-1.00	17-APR-2004 11:45:00	-2.00	17-APR-2004 11:45:00	-2.00
17-APR-2004 12:00:00	-0.53	17-APR-2004 12:00:00	-2.03	17-APR-2004 12:00:00	-2.07
17-APR-2004 12:15:00	-0.73	17-APR-2004 12:15:00	-1.93	17-APR-2004 12:15:00	-2.07
17-APR-2004 12:30:00	-0.73	17-APR-2004 12:30:00	-2.00	17-APR-2004 12:30:00	-2.07
17-APR-2004 12:45:00	-1.17	17-APR-2004 12:45:00	-1.97	17-APR-2004 12:45:00	-2.13
17-APR-2004 13:00:00	-0.73	17-APR-2004 13:00:00	-2.00	17-APR-2004 13:00:00	-2.00
17-APR-2004 13:15:00	-0.60	17-APR-2004 13:15:00	-2.00	17-APR-2004 13:15:00	-2.00
17-APR-2004 13:30:00	-0.73	17-APR-2004 13:30:00	-2.00	17-APR-2004 13:30:00	-2.03
17-APR-2004 13:45:00	-0.47	17-APR-2004 13:45:00	-2.00	17-APR-2004 13:45:00	-2.00
17-APR-2004 14:00:00	-0.73	17-APR-2004 14:00:00	-2.00	17-APR-2004 14:00:00	-2.07
17-APR-2004 14:15:00	-0.27	17-APR-2004 14:15:00	-2.00	17-APR-2004 14:15:00	-2.13

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
17-APR-2004 14:30:00	-0.53	17-APR-2004 14:30:00	-2.00	17-APR-2004 14:30:00	-2.00
17-APR-2004 14:45:00	-0.73	17-APR-2004 14:45:00	-2.07	17-APR-2004 14:45:00	-2.00
17-APR-2004 15:00:00	-1.07	17-APR-2004 15:00:00	-2.07	17-APR-2004 15:00:00	-2.00
17-APR-2004 15:15:00	-0.80	17-APR-2004 15:15:00	-2.03	17-APR-2004 15:15:00	-2.00
17-APR-2004 15:30:00	-0.60	17-APR-2004 15:30:00	-2.10	17-APR-2004 15:30:00	-2.07
17-APR-2004 15:45:00	-0.60	17-APR-2004 15:45:00	-2.00	17-APR-2004 15:45:00	-2.03
17-APR-2004 16:00:00	-0.73	17-APR-2004 16:00:00	-2.07	17-APR-2004 16:00:00	-2.00
17-APR-2004 16:15:00	-1.00	17-APR-2004 16:15:00	-2.10	17-APR-2004 16:15:00	-2.13
17-APR-2004 16:30:00	-1.27	17-APR-2004 16:30:00	-2.13	17-APR-2004 16:30:00	-2.03
17-APR-2004 16:45:00	-1.07	17-APR-2004 16:45:00	-2.07	17-APR-2004 16:45:00	-2.07
17-APR-2004 17:00:00	-1.00	17-APR-2004 17:00:00	-2.07	17-APR-2004 17:00:00	-2.00
17-APR-2004 17:15:00	-0.93	17-APR-2004 17:15:00	-2.07	17-APR-2004 17:15:00	-2.07
17-APR-2004 17:30:00	-0.80	17-APR-2004 17:30:00	-2.07	17-APR-2004 17:30:00	-2.13
17-APR-2004 17:45:00	-0.67	17-APR-2004 17:45:00	-2.03	17-APR-2004 17:45:00	-2.07
17-APR-2004 18:00:00	-0.93	17-APR-2004 18:00:00	-2.07	17-APR-2004 18:00:00	-2.20
17-APR-2004 18:15:00	-1.03	17-APR-2004 18:15:00	-2.03	17-APR-2004 18:15:00	-2.07
17-APR-2004 18:30:00	-1.33	17-APR-2004 18:30:00	-2.00	17-APR-2004 18:30:00	-2.13
17-APR-2004 18:45:00	-0.80	17-APR-2004 18:45:00	-2.13	17-APR-2004 18:45:00	-2.07
17-APR-2004 19:00:00	-0.80	17-APR-2004 19:00:00	-2.10	17-APR-2004 19:00:00	-2.07
17-APR-2004 19:15:00	-1.00	17-APR-2004 19:15:00	-2.07	17-APR-2004 19:15:00	-2.03
17-APR-2004 19:30:00	-1.20	17-APR-2004 19:30:00	-2.03	17-APR-2004 19:30:00	-2.07
17-APR-2004 19:45:00	-1.13	17-APR-2004 19:45:00	-2.07	17-APR-2004 19:45:00	-2.13
17-APR-2004 20:00:00	-0.93	17-APR-2004 20:00:00	-2.03	17-APR-2004 20:00:00	-2.07
17-APR-2004 20:15:00	-1.27	17-APR-2004 20:15:00	-2.07	17-APR-2004 20:15:00	-2.13
17-APR-2004 20:30:00	-1.13	17-APR-2004 20:30:00	-2.07	17-APR-2004 20:30:00	-2.13
17-APR-2004 20:45:00	-0.53	17-APR-2004 20:45:00	-2.00	17-APR-2004 20:45:00	-2.13
17-APR-2004 21:00:00	-0.67	17-APR-2004 21:00:00	-2.00	17-APR-2004 21:00:00	-2.13
17-APR-2004 21:15:00	-0.87	17-APR-2004 21:15:00	-2.03	17-APR-2004 21:15:00	-2.17
17-APR-2004 21:30:00	-1.00	17-APR-2004 21:30:00	-2.00	17-APR-2004 21:30:00	-2.13
17-APR-2004 21:45:00	-1.00	17-APR-2004 21:45:00	-2.07	17-APR-2004 21:45:00	-2.13
17-APR-2004 22:00:00	-0.93	17-APR-2004 22:00:00	-2.03	17-APR-2004 22:00:00	-2.13
17-APR-2004 22:15:00	-0.60	17-APR-2004 22:15:00	-2.00	17-APR-2004 22:15:00	-2.20
17-APR-2004 22:30:00	-0.60	17-APR-2004 22:30:00	-2.07	17-APR-2004 22:30:00	-2.20
17-APR-2004 22:45:00	-0.87	17-APR-2004 22:45:00	-2.07	17-APR-2004 22:45:00	-2.13
17-APR-2004 23:00:00	-0.87	17-APR-2004 23:00:00	-2.07	17-APR-2004 23:00:00	-2.23
17-APR-2004 23:15:00	-1.00	17-APR-2004 23:15:00	-2.00	17-APR-2004 23:15:00	-2.13
17-APR-2004 23:30:00	-0.67	17-APR-2004 23:30:00	-2.07	17-APR-2004 23:30:00	-2.13
17-APR-2004 23:45:00	-0.53	17-APR-2004 23:45:00	-2.13	17-APR-2004 23:45:00	-2.27
18-APR-2004 00:00:00	**-0.47**	**18-APR-2004 00:00:00**	**-2.13**	**18-APR-2004 00:00:00**	**-2.20**
18-APR-2004 00:15:00	-0.63	18-APR-2004 00:15:00	-2.13	18-APR-2004 00:15:00	-2.13
18-APR-2004 00:30:00	-0.73	18-APR-2004 00:30:00	-2.13	18-APR-2004 00:30:00	-2.17
18-APR-2004 00:45:00	-0.60	18-APR-2004 00:45:00	-2.13	18-APR-2004 00:45:00	-2.13
18-APR-2004 01:00:00	-0.73	18-APR-2004 01:00:00	-2.13	18-APR-2004 01:00:00	-2.17
18-APR-2004 01:15:00	-0.80	18-APR-2004 01:15:00	-2.20	18-APR-2004 01:15:00	-2.13
18-APR-2004 01:30:00	-0.93	18-APR-2004 01:30:00	-2.20	18-APR-2004 01:30:00	-2.17
18-APR-2004 01:45:00	-0.53	18-APR-2004 01:45:00	-2.13	18-APR-2004 01:45:00	-2.27
18-APR-2004 02:00:00	-0.20	18-APR-2004 02:00:00	-2.13	18-APR-2004 02:00:00	-2.23
18-APR-2004 02:15:00	-0.87	18-APR-2004 02:15:00	-2.13	18-APR-2004 02:15:00	-2.27
18-APR-2004 02:30:00	-1.40	18-APR-2004 02:30:00	-2.13	18-APR-2004 02:30:00	-2.20
18-APR-2004 02:45:00	-1.13	18-APR-2004 02:45:00	-2.07	18-APR-2004 02:45:00	-2.20
18-APR-2004 03:00:00	-1.13	18-APR-2004 03:00:00	-2.17	18-APR-2004 03:00:00	-2.17
18-APR-2004 03:15:00	-0.67	18-APR-2004 03:15:00	-2.13	18-APR-2004 03:15:00	-2.13
18-APR-2004 03:30:00	-0.67	18-APR-2004 03:30:00	-2.13	18-APR-2004 03:30:00	-2.13
18-APR-2004 03:45:00	-0.73	18-APR-2004 03:45:00	-2.07	18-APR-2004 03:45:00	-2.20
18-APR-2004 04:00:00	-0.67	18-APR-2004 04:00:00	-2.07	18-APR-2004 04:00:00	-2.33
18-APR-2004 04:15:00	-0.67	18-APR-2004 04:15:00	-2.10	18-APR-2004 04:15:00	-2.13
18-APR-2004 04:30:00	-0.40	18-APR-2004 04:30:00	-2.13	18-APR-2004 04:30:00	-2.13
18-APR-2004 04:45:00	-1.07	18-APR-2004 04:45:00	-2.10	18-APR-2004 04:45:00	-2.20
18-APR-2004 05:00:00	-1.10	18-APR-2004 05:00:00	-2.13	18-APR-2004 05:00:00	-2.23
18-APR-2004 05:15:00	-1.07	18-APR-2004 05:15:00	-2.13	18-APR-2004 05:15:00	-2.40

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
18-APR-2004 05:30:00	-1.13	18-APR-2004 05:30:00	-2.23	18-APR-2004 05:30:00	-2.27
18-APR-2004 05:45:00	-0.80	18-APR-2004 05:45:00	-2.20	18-APR-2004 05:45:00	-2.23
18-APR-2004 06:00:00	-0.67	18-APR-2004 06:00:00	-2.13	18-APR-2004 06:00:00	-2.23
18-APR-2004 06:15:00	-1.80	18-APR-2004 06:15:00	-2.20	18-APR-2004 06:15:00	-2.20
18-APR-2004 06:30:00	-2.00	18-APR-2004 06:30:00	-2.20	18-APR-2004 06:30:00	-2.37
18-APR-2004 06:45:00	-1.53	18-APR-2004 06:45:00	-2.27	18-APR-2004 06:45:00	-2.13
18-APR-2004 07:00:00	-1.33	18-APR-2004 07:00:00	-2.26	18-APR-2004 07:00:00	-2.27
18-APR-2004 07:15:00	-1.07	18-APR-2004 07:15:00	-2.23	18-APR-2004 07:15:00	-2.27
18-APR-2004 07:30:00	0.30	18-APR-2004 07:30:00	-2.13	18-APR-2004 07:30:00	-2.34
18-APR-2004 07:45:00	-0.87	18-APR-2004 07:45:00	-2.17	18-APR-2004 07:45:00	-2.33
18-APR-2004 08:00:00	-0.53	18-APR-2004 08:00:00	-2.13	18-APR-2004 08:00:00	-2.27
18-APR-2004 08:15:00	-1.10	18-APR-2004 08:15:00	-2.13	18-APR-2004 08:15:00	-2.37
18-APR-2004 08:30:00	-1.23	18-APR-2004 08:30:00	-2.17	18-APR-2004 08:30:00	-2.40
18-APR-2004 08:45:00	-1.60	18-APR-2004 08:45:00	-2.20	18-APR-2004 08:45:00	-2.40
18-APR-2004 09:00:00	-0.57	18-APR-2004 09:00:00	-2.20	18-APR-2004 09:00:00	-2.33
18-APR-2004 09:15:00	-1.03	18-APR-2004 09:15:00	-2.20	18-APR-2004 09:15:00	-2.37
18-APR-2004 09:30:00	-0.47	18-APR-2004 09:30:00	-2.20	18-APR-2004 09:30:00	-2.47
18-APR-2004 09:45:00	-0.93	18-APR-2004 09:45:00	-2.20	18-APR-2004 09:45:00	-2.30
18-APR-2004 10:00:00	-1.07	18-APR-2004 10:00:00	-2.30	18-APR-2004 10:00:00	-2.47
18-APR-2004 10:15:00	-1.07	18-APR-2004 10:15:00	-2.27	18-APR-2004 10:15:00	-2.23
18-APR-2004 10:30:00	-1.27	18-APR-2004 10:30:00	-2.20	18-APR-2004 10:30:00	-2.30
18-APR-2004 10:45:00	-0.70	18-APR-2004 10:45:00	-2.33	18-APR-2004 10:45:00	-2.33
18-APR-2004 11:00:00	-1.00	18-APR-2004 11:00:00	-2.27	18-APR-2004 11:00:00	-2.43
18-APR-2004 11:15:00	-1.30	18-APR-2004 11:15:00	-2.23	18-APR-2004 11:15:00	-2.40
18-APR-2004 11:30:00	-0.87	18-APR-2004 11:30:00	-2.13	18-APR-2004 11:30:00	-2.40
18-APR-2004 11:45:00	-1.07	18-APR-2004 11:45:00	-2.13	18-APR-2004 11:45:00	-2.40
18-APR-2004 12:00:00	-1.20	18-APR-2004 12:00:00	-2.13	18-APR-2004 12:00:00	-2.47
18-APR-2004 12:15:00	-0.87	18-APR-2004 12:15:00	-2.27	18-APR-2004 12:15:00	-2.53
18-APR-2004 12:30:00	-0.93	18-APR-2004 12:30:00	-2.17	18-APR-2004 12:30:00	-2.47
18-APR-2004 12:45:00	-0.63	18-APR-2004 12:45:00	-2.13	18-APR-2004 12:45:00	-2.47
18-APR-2004 13:00:00	-0.60	18-APR-2004 13:00:00	-2.17	18-APR-2004 13:00:00	-2.40
18-APR-2004 13:15:00	-1.13	18-APR-2004 13:15:00	-2.13	18-APR-2004 13:15:00	-2.43
18-APR-2004 13:30:00	-1.00	18-APR-2004 13:30:00	-2.27	18-APR-2004 13:30:00	-2.37
18-APR-2004 13:45:00	-0.93	18-APR-2004 13:45:00	-2.27	18-APR-2004 13:45:00	-2.40
18-APR-2004 14:00:00	-0.90	18-APR-2004 14:00:00	-2.23	18-APR-2004 14:00:00	-2.47
18-APR-2004 14:15:00	-0.87	18-APR-2004 14:15:00	-2.17	18-APR-2004 14:15:00	-2.47
18-APR-2004 14:30:00	-0.73	18-APR-2004 14:30:00	-2.20	18-APR-2004 14:30:00	-2.40
18-APR-2004 14:45:00	-0.30	18-APR-2004 14:45:00	-2.13	18-APR-2004 14:45:00	-2.53
18-APR-2004 15:00:00	-1.00	18-APR-2004 15:00:00	-2.13	18-APR-2004 15:00:00	-2.43
18-APR-2004 15:15:00	-1.27	18-APR-2004 15:15:00	-2.13	18-APR-2004 15:15:00	-2.43
18-APR-2004 15:30:00	-0.87	18-APR-2004 15:30:00	-2.20	18-APR-2004 15:30:00	-2.57
18-APR-2004 15:45:00	-1.13	18-APR-2004 15:45:00	-2.23	18-APR-2004 15:45:00	-2.50
18-APR-2004 16:00:00	-0.67	18-APR-2004 16:00:00	-2.20	18-APR-2004 16:00:00	-2.43
18-APR-2004 16:15:00	-1.13	18-APR-2004 16:15:00	-2.10	18-APR-2004 16:15:00	-2.43
18-APR-2004 16:30:00	-1.27	18-APR-2004 16:30:00	-2.13	18-APR-2004 16:30:00	-2.43
18-APR-2004 16:45:00	-1.17	18-APR-2004 16:45:00	-2.20	18-APR-2004 16:45:00	-2.33
18-APR-2004 17:00:00	-1.70	18-APR-2004 17:00:00	-2.13	18-APR-2004 17:00:00	-2.60
18-APR-2004 17:15:00	-1.57	18-APR-2004 17:15:00	-2.13	18-APR-2004 17:15:00	-2.43
18-APR-2004 17:30:00	-0.80	18-APR-2004 17:30:00	-2.07	18-APR-2004 17:30:00	-2.47
18-APR-2004 17:45:00	-1.07	18-APR-2004 17:45:00	-2.07	18-APR-2004 17:45:00	-2.50
18-APR-2004 18:00:00	-1.40	18-APR-2004 18:00:00	-2.07	18-APR-2004 18:00:00	-2.33
18-APR-2004 18:15:00	-1.73	18-APR-2004 18:15:00	-2.07	18-APR-2004 18:15:00	-2.60
18-APR-2004 18:30:00	-1.37	18-APR-2004 18:30:00	-2.13	18-APR-2004 18:30:00	-2.37
18-APR-2004 18:45:00	-1.40	18-APR-2004 18:45:00	-2.10	18-APR-2004 18:45:00	-2.40
18-APR-2004 19:00:00	-1.47	18-APR-2004 19:00:00	-2.13	18-APR-2004 19:00:00	-2.33
18-APR-2004 19:15:00	-1.50	18-APR-2004 19:15:00	-2.13	18-APR-2004 19:15:00	-2.33
18-APR-2004 19:30:00	-1.37	18-APR-2004 19:30:00	-2.20	18-APR-2004 19:30:00	-2.60
18-APR-2004 19:45:00	-1.33	18-APR-2004 19:45:00	-2.20	18-APR-2004 19:45:00	-2.40
18-APR-2004 20:00:00	-1.30	18-APR-2004 20:00:00	-2.20	18-APR-2004 20:00:00	-2.40
18-APR-2004 20:15:00	-1.20	18-APR-2004 20:15:00	-2.13	18-APR-2004 20:15:00	-2.33

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
18-APR-2004 20:30:00	-1.27	18-APR-2004 20:30:00	-2.13	18-APR-2004 20:30:00	-2.33
18-APR-2004 20:45:00	-1.60	18-APR-2004 20:45:00	-2.27	18-APR-2004 20:45:00	-2.37
18-APR-2004 21:00:00	-1.13	18-APR-2004 21:00:00	-2.30	18-APR-2004 21:00:00	-2.33
18-APR-2004 21:15:00	-1.60	18-APR-2004 21:15:00	-2.17	18-APR-2004 21:15:00	-2.40
18-APR-2004 21:30:00	-1.53	18-APR-2004 21:30:00	-2.13	18-APR-2004 21:30:00	-2.30
18-APR-2004 21:45:00	-1.67	18-APR-2004 21:45:00	-2.13	18-APR-2004 21:45:00	-2.37
18-APR-2004 22:00:00	-1.30	18-APR-2004 22:00:00	-2.13	18-APR-2004 22:00:00	-2.37
18-APR-2004 22:15:00	-1.43	18-APR-2004 22:15:00	-2.13	18-APR-2004 22:15:00	-2.37
18-APR-2004 22:30:00	-1.00	18-APR-2004 22:30:00	-2.13	18-APR-2004 22:30:00	-2.40
18-APR-2004 22:45:00	-1.03	18-APR-2004 22:45:00	-2.10	18-APR-2004 22:45:00	-2.33
18-APR-2004 23:00:00	-1.20	18-APR-2004 23:00:00	-2.07	18-APR-2004 23:00:00	-2.33
18-APR-2004 23:15:00	-0.93	18-APR-2004 23:15:00	-2.03	18-APR-2004 23:15:00	-2.33
18-APR-2004 23:30:00	-1.10	18-APR-2004 23:30:00	-2.10	18-APR-2004 23:30:00	-2.33
18-APR-2004 23:45:00	-0.97	18-APR-2004 23:45:00	-2.03	18-APR-2004 23:45:00	-2.33
19-APR-2004 00:00:00	**-1.27**	**19-APR-2004 00:00:00**	**-2.03**	**19-APR-2004 00:00:00**	**-2.33**
19-APR-2004 00:15:00	-1.73	19-APR-2004 00:15:00	-2.00	19-APR-2004 00:15:00	-2.30
19-APR-2004 00:30:00	-0.80	19-APR-2004 00:30:00	-2.00	19-APR-2004 00:30:00	-2.27
19-APR-2004 00:45:00	-0.97	19-APR-2004 00:45:00	-2.07	19-APR-2004 00:45:00	-2.33
19-APR-2004 01:00:00	-1.00	19-APR-2004 01:00:00	-2.07	19-APR-2004 01:00:00	-2.33
19-APR-2004 01:15:00	-0.97	19-APR-2004 01:15:00	-2.00	19-APR-2004 01:15:00	-2.33
19-APR-2004 01:30:00	-1.17	19-APR-2004 01:30:00	-2.00	19-APR-2004 01:30:00	-2.27
19-APR-2004 01:45:00	-0.93	19-APR-2004 01:45:00	-2.00	19-APR-2004 01:45:00	-2.23
19-APR-2004 02:00:00	-1.00	19-APR-2004 02:00:00	-1.97	19-APR-2004 02:00:00	-2.27
19-APR-2004 02:15:00	-1.00	19-APR-2004 02:15:00	-2.00	19-APR-2004 02:15:00	-2.27
19-APR-2004 02:30:00	-1.07	19-APR-2004 02:30:00	-1.97	19-APR-2004 02:30:00	-2.27
19-APR-2004 02:45:00	-1.07	19-APR-2004 02:45:00	-2.03	19-APR-2004 02:45:00	-2.27
19-APR-2004 03:00:00	-1.00	19-APR-2004 03:00:00	-2.00	19-APR-2004 03:00:00	-2.27
19-APR-2004 03:15:00	-1.20	19-APR-2004 03:15:00	-1.93	19-APR-2004 03:15:00	-2.27
19-APR-2004 03:30:00	-1.60	19-APR-2004 03:30:00	-1.97	19-APR-2004 03:30:00	-2.27
19-APR-2004 03:45:00	-1.30	19-APR-2004 03:45:00	-1.97	19-APR-2004 03:45:00	-2.27
19-APR-2004 04:00:00	-1.50	19-APR-2004 04:00:00	-2.03	19-APR-2004 04:00:00	-2.40
19-APR-2004 04:15:00	-0.93	19-APR-2004 04:15:00	-2.00	19-APR-2004 04:15:00	-2.33
19-APR-2004 04:30:00	-1.33	19-APR-2004 04:30:00	-2.00	19-APR-2004 04:30:00	-2.27
19-APR-2004 04:45:00	-1.53	19-APR-2004 04:45:00	-1.97	19-APR-2004 04:45:00	-2.27
19-APR-2004 05:00:00	-1.27	19-APR-2004 05:00:00	-2.00	19-APR-2004 05:00:00	-2.20
19-APR-2004 05:15:00	-1.50	19-APR-2004 05:15:00	-2.07	19-APR-2004 05:15:00	-2.27
19-APR-2004 05:30:00	-1.13	19-APR-2004 05:30:00	-2.07	19-APR-2004 05:30:00	-2.17
19-APR-2004 05:45:00	-1.43	19-APR-2004 05:45:00	-2.07	19-APR-2004 05:45:00	-2.20
19-APR-2004 06:00:00	-1.43	19-APR-2004 06:00:00	-2.03	19-APR-2004 06:00:00	-2.13
19-APR-2004 06:15:00	-1.37	19-APR-2004 06:15:00	-2.00	19-APR-2004 06:15:00	-2.37
19-APR-2004 06:30:00	-1.37	19-APR-2004 06:30:00	-2.00	19-APR-2004 06:30:00	-2.27
19-APR-2004 06:45:00	-1.27	19-APR-2004 06:45:00	-2.07	19-APR-2004 06:45:00	-2.20
19-APR-2004 07:00:00	-1.23	19-APR-2004 07:00:00	-2.07	19-APR-2004 07:00:00	-2.27
19-APR-2004 07:15:00	-1.60	19-APR-2004 07:15:00	-2.00	19-APR-2004 07:15:00	-2.27
19-APR-2004 07:30:00	-1.57	19-APR-2004 07:30:00	-2.07	19-APR-2004 07:30:00	-2.40
19-APR-2004 07:45:00	-1.60	19-APR-2004 07:45:00	-2.07	19-APR-2004 07:45:00	-2.27
19-APR-2004 08:00:00	-1.60	19-APR-2004 08:00:00	-2.07	19-APR-2004 08:00:00	-2.27
19-APR-2004 08:15:00	-1.47	19-APR-2004 08:15:00	-2.00	19-APR-2004 08:15:00	-2.27
19-APR-2004 08:30:00	-1.20	19-APR-2004 08:30:00	-2.00	19-APR-2004 08:30:00	-2.33
19-APR-2004 08:45:00	-1.23	19-APR-2004 08:45:00	-2.03	19-APR-2004 08:45:00	-2.33
19-APR-2004 09:00:00	-1.07	19-APR-2004 09:00:00	-1.80	19-APR-2004 09:00:00	-2.20
19-APR-2004 09:15:00	-0.93	19-APR-2004 09:15:00	-1.77	19-APR-2004 09:15:00	-2.27
19-APR-2004 09:30:00	-1.03	19-APR-2004 09:30:00	-1.67	19-APR-2004 09:30:00	-2.33
19-APR-2004 09:45:00	-1.07	19-APR-2004 09:45:00	-2.00	19-APR-2004 09:45:00	-2.33
19-APR-2004 10:00:00	-1.40	19-APR-2004 10:00:00	-2.00	19-APR-2004 10:00:00	-2.27
19-APR-2004 10:15:00	-1.07	19-APR-2004 10:15:00	-2.00	19-APR-2004 10:15:00	-2.40
19-APR-2004 10:30:00	-1.07	19-APR-2004 10:30:00	-1.93	19-APR-2004 10:30:00	-2.07
19-APR-2004 10:45:00	-1.27	19-APR-2004 10:45:00	-2.03	19-APR-2004 10:45:00	-2.33
19-APR-2004 11:00:00	-1.40	19-APR-2004 11:00:00	-2.00	19-APR-2004 11:00:00	-2.40
19-APR-2004 11:15:00	-1.40	19-APR-2004 11:15:00	-2.07	19-APR-2004 11:15:00	-2.27

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
19-APR-2004 11:30:00	-1.00	19-APR-2004 11:30:00	-2.13	19-APR-2004 11:30:00	-2.43
19-APR-2004 11:45:00	-0.93	19-APR-2004 11:45:00	-2.13	19-APR-2004 11:45:00	-2.47
19-APR-2004 12:00:00	-1.07	19-APR-2004 12:00:00	-2.07	19-APR-2004 12:00:00	-2.40
19-APR-2004 12:15:00	-0.73	19-APR-2004 12:15:00	-2.20	19-APR-2004 12:15:00	-2.33
19-APR-2004 12:30:00	-0.73	19-APR-2004 12:30:00	-2.13	19-APR-2004 12:30:00	-2.27
19-APR-2004 12:45:00	-0.63	19-APR-2004 12:45:00	-2.10	19-APR-2004 12:45:00	-2.33
19-APR-2004 13:00:00	-0.80	19-APR-2004 13:00:00	-2.20	19-APR-2004 13:00:00	-2.40
19-APR-2004 13:15:00	-1.20	19-APR-2004 13:15:00	-2.20	19-APR-2004 13:15:00	-2.43
19-APR-2004 13:30:00	-0.87	19-APR-2004 13:30:00	-2.20	19-APR-2004 13:30:00	-2.37
19-APR-2004 13:45:00	-0.80	19-APR-2004 13:45:00	-2.20	19-APR-2004 13:45:00	-2.33
19-APR-2004 14:00:00	-0.60	19-APR-2004 14:00:00	-2.20	19-APR-2004 14:00:00	-2.33
19-APR-2004 14:15:00	-0.47	19-APR-2004 14:15:00	-2.27	19-APR-2004 14:15:00	-2.40
19-APR-2004 14:30:00	-0.70	19-APR-2004 14:30:00	-2.33	19-APR-2004 14:30:00	-2.33
19-APR-2004 14:45:00	-0.87	19-APR-2004 14:45:00	-2.33	19-APR-2004 14:45:00	-2.40
19-APR-2004 15:00:00	-1.00	19-APR-2004 15:00:00	-2.27	19-APR-2004 15:00:00	-2.40
19-APR-2004 15:15:00	-1.00	19-APR-2004 15:15:00	-2.23	19-APR-2004 15:15:00	-2.47
19-APR-2004 15:30:00	-0.93	19-APR-2004 15:30:00	-2.27	19-APR-2004 15:30:00	-2.40
19-APR-2004 15:45:00	-0.93	19-APR-2004 15:45:00	-2.27	19-APR-2004 15:45:00	-2.33
19-APR-2004 16:00:00	-1.07	19-APR-2004 16:00:00	-2.33	19-APR-2004 16:00:00	-2.33
19-APR-2004 16:15:00	-1.13	19-APR-2004 16:15:00	-2.23	19-APR-2004 16:15:00	-2.37
19-APR-2004 16:30:00	-1.00	19-APR-2004 16:30:00	-2.33	19-APR-2004 16:30:00	-2.33
19-APR-2004 16:45:00	-1.00	19-APR-2004 16:45:00	-2.33	19-APR-2004 16:45:00	-2.33
19-APR-2004 17:00:00	-0.93	19-APR-2004 17:00:00	-2.30	19-APR-2004 17:00:00	-2.33
19-APR-2004 17:15:00	-0.80	19-APR-2004 17:15:00	-2.27	19-APR-2004 17:15:00	-2.30
19-APR-2004 17:30:00	-0.80	19-APR-2004 17:30:00	-2.33	19-APR-2004 17:30:00	-2.33
19-APR-2004 17:45:00	-1.27	19-APR-2004 17:45:00	-2.33	19-APR-2004 17:45:00	-2.43
19-APR-2004 18:00:00	-1.40	19-APR-2004 18:00:00	-2.33	19-APR-2004 18:00:00	-2.37
19-APR-2004 18:15:00	-1.40	19-APR-2004 18:15:00	-2.27	19-APR-2004 18:15:00	-2.33
19-APR-2004 18:30:00	-1.20	19-APR-2004 18:30:00	-2.27	19-APR-2004 18:30:00	-2.37
19-APR-2004 18:45:00	-1.13	19-APR-2004 18:45:00	-2.27	19-APR-2004 18:45:00	-2.27
19-APR-2004 19:00:00	-1.20	19-APR-2004 19:00:00	-2.33	19-APR-2004 19:00:00	-2.20
19-APR-2004 19:15:00	-1.47	19-APR-2004 19:15:00	-2.40	19-APR-2004 19:15:00	-2.23
19-APR-2004 19:30:00	-1.00	19-APR-2004 19:30:00	-2.30	19-APR-2004 19:30:00	-2.33
19-APR-2004 19:45:00	-1.37	19-APR-2004 19:45:00	-2.33	19-APR-2004 19:45:00	-2.43
19-APR-2004 20:00:00	-1.33	19-APR-2004 20:00:00	-2.27	19-APR-2004 20:00:00	-2.33
19-APR-2004 20:15:00	-1.27	19-APR-2004 20:15:00	-2.27	19-APR-2004 20:15:00	-2.33
19-APR-2004 20:30:00	-1.07	19-APR-2004 20:30:00	-2.27	19-APR-2004 20:30:00	-2.23
19-APR-2004 20:45:00	-1.07	19-APR-2004 20:45:00	-2.33	19-APR-2004 20:45:00	-2.33
19-APR-2004 21:00:00	-1.20	19-APR-2004 21:00:00	-2.33	19-APR-2004 21:00:00	-2.33
19-APR-2004 21:15:00	-1.20	19-APR-2004 21:15:00	-2.33	19-APR-2004 21:15:00	-2.27
19-APR-2004 21:30:00	-1.20	19-APR-2004 21:30:00	-2.27	19-APR-2004 21:30:00	-2.30
19-APR-2004 21:45:00	-1.33	19-APR-2004 21:45:00	-2.27	19-APR-2004 21:45:00	-2.43
19-APR-2004 22:00:00	-1.20	19-APR-2004 22:00:00	-2.33	19-APR-2004 22:00:00	-2.33
19-APR-2004 22:15:00	-1.07	19-APR-2004 22:15:00	-2.30	19-APR-2004 22:15:00	-2.27
19-APR-2004 22:30:00	-0.93	19-APR-2004 22:30:00	-2.27	19-APR-2004 22:30:00	-2.37
19-APR-2004 22:45:00	-1.07	19-APR-2004 22:45:00	-2.27	19-APR-2004 22:45:00	-2.27
19-APR-2004 23:00:00	-1.13	19-APR-2004 23:00:00	-2.20	19-APR-2004 23:00:00	-2.30
19-APR-2004 23:15:00	-0.87	19-APR-2004 23:15:00	-2.43	19-APR-2004 23:15:00	-2.33
19-APR-2004 23:30:00	-0.87	19-APR-2004 23:30:00	-2.33	19-APR-2004 23:30:00	-2.33
19-APR-2004 23:45:00	-1.00	19-APR-2004 23:45:00	-2.37	19-APR-2004 23:45:00	-2.30
20-APR-2004 00:00:00	**-0.93**	**20-APR-2004 00:00:00**	**-2.27**	**20-APR-2004 00:00:00**	**-2.33**
20-APR-2004 00:15:00	-0.73	20-APR-2004 00:15:00	-2.30	20-APR-2004 00:15:00	-2.27
20-APR-2004 00:30:00	-0.83	20-APR-2004 00:30:00	-2.27	20-APR-2004 00:30:00	-2.27
20-APR-2004 00:45:00	-0.87	20-APR-2004 00:45:00	-2.27	20-APR-2004 00:45:00	-2.27
20-APR-2004 01:00:00	-0.93	20-APR-2004 01:00:00	-2.27	20-APR-2004 01:00:00	-2.30
20-APR-2004 01:15:00	-0.93	20-APR-2004 01:15:00	-2.23	20-APR-2004 01:15:00	-2.27
20-APR-2004 01:30:00	-0.93	20-APR-2004 01:30:00	-2.23	20-APR-2004 01:30:00	-2.33
20-APR-2004 01:45:00	-0.77	20-APR-2004 01:45:00	-2.20	20-APR-2004 01:45:00	-2.40
20-APR-2004 02:00:00	-0.97	20-APR-2004 02:00:00	-2.20	20-APR-2004 02:00:00	-2.43
20-APR-2004 02:15:00	-1.07	20-APR-2004 02:15:00	-2.23	20-APR-2004 02:15:00	-2.33

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
20-APR-2004 02:30:00	-1.10	20-APR-2004 02:30:00	-2.23	20-APR-2004 02:30:00	-2.27
20-APR-2004 02:45:00	-1.03	20-APR-2004 02:45:00	-2.27	20-APR-2004 02:45:00	-2.20
20-APR-2004 03:00:00	-1.00	20-APR-2004 03:00:00	-2.20	20-APR-2004 03:00:00	-2.27
20-APR-2004 03:15:00	-0.87	20-APR-2004 03:15:00	-2.36	20-APR-2004 03:15:00	-2.20
20-APR-2004 03:30:00	-0.73	20-APR-2004 03:30:00	-2.33	20-APR-2004 03:30:00	-2.20
20-APR-2004 03:45:00	-0.87	20-APR-2004 03:45:00	-2.27	20-APR-2004 03:45:00	-2.20
20-APR-2004 04:00:00	-1.03	20-APR-2004 04:00:00	-2.20	20-APR-2004 04:00:00	-2.17
20-APR-2004 04:15:00	-1.23	20-APR-2004 04:15:00	-2.27	20-APR-2004 04:15:00	-2.27
20-APR-2004 04:30:00	-1.03	20-APR-2004 04:30:00	-2.20	20-APR-2004 04:30:00	-2.17
20-APR-2004 04:45:00	-0.93	20-APR-2004 04:45:00	-2.20	20-APR-2004 04:45:00	-2.27
20-APR-2004 05:00:00	-1.17	20-APR-2004 05:00:00	-2.23	20-APR-2004 05:00:00	-2.30
20-APR-2004 05:15:00	-1.07	20-APR-2004 05:15:00	-2.17	20-APR-2004 05:15:00	-2.20
20-APR-2004 05:30:00	-1.00	20-APR-2004 05:30:00	-2.20	20-APR-2004 05:30:00	-2.23
20-APR-2004 05:45:00	-1.10	20-APR-2004 05:45:00	-2.20	20-APR-2004 05:45:00	-2.20
20-APR-2004 06:00:00	-1.27	20-APR-2004 06:00:00	-2.20	20-APR-2004 06:00:00	-2.20
20-APR-2004 06:15:00	-1.13	20-APR-2004 06:15:00	-2.13	20-APR-2004 06:15:00	-2.20
20-APR-2004 06:30:00	-1.10	20-APR-2004 06:30:00	-2.20	20-APR-2004 06:30:00	-2.13
20-APR-2004 06:45:00	-1.20	20-APR-2004 06:45:00	-2.20	20-APR-2004 06:45:00	-2.20
20-APR-2004 07:00:00	-0.93	20-APR-2004 07:00:00	-2.13	20-APR-2004 07:00:00	-2.20
20-APR-2004 07:15:00	-1.07	20-APR-2004 07:15:00	-2.14	20-APR-2004 07:15:00	-2.17
20-APR-2004 07:30:00	-1.10	20-APR-2004 07:30:00	-2.13	20-APR-2004 07:30:00	-2.20
20-APR-2004 07:45:00	-1.00	20-APR-2004 07:45:00	-2.13	20-APR-2004 07:45:00	-2.20
20-APR-2004 08:00:00	-1.07	20-APR-2004 08:00:00	-2.13	20-APR-2004 08:00:00	-2.27
20-APR-2004 08:15:00	-0.90	20-APR-2004 08:15:00	-2.10	20-APR-2004 08:15:00	-2.27
20-APR-2004 08:30:00	-1.07	20-APR-2004 08:30:00	-2.13	20-APR-2004 08:30:00	-2.23
20-APR-2004 08:45:00	-1.07	20-APR-2004 08:45:00	-2.13	20-APR-2004 08:45:00	-2.20
20-APR-2004 09:00:00	-1.13	20-APR-2004 09:00:00	-2.20	20-APR-2004 09:00:00	-2.20
20-APR-2004 09:15:00	-0.97	20-APR-2004 09:15:00	-2.20	20-APR-2004 09:15:00	-2.33
20-APR-2004 09:30:00	-0.90	20-APR-2004 09:30:00	-2.27	20-APR-2004 09:30:00	-2.20
20-APR-2004 09:45:00	-1.10	20-APR-2004 09:45:00	-2.20	20-APR-2004 09:45:00	-2.20
20-APR-2004 10:00:00	-0.93	20-APR-2004 10:00:00	-2.20	20-APR-2004 10:00:00	-2.13
20-APR-2004 10:15:00	-0.87	20-APR-2004 10:15:00	-2.17	20-APR-2004 10:15:00	-2.13
20-APR-2004 10:30:00	-0.87	20-APR-2004 10:30:00	-2.20	20-APR-2004 10:30:00	-2.20
20-APR-2004 10:45:00	-0.80	20-APR-2004 10:45:00	-2.27	20-APR-2004 10:45:00	-2.30
20-APR-2004 11:00:00	-1.10	20-APR-2004 11:00:00	-2.20	20-APR-2004 11:00:00	-2.33
20-APR-2004 11:15:00	-0.93	20-APR-2004 11:15:00	-2.17	20-APR-2004 11:15:00	-2.27
20-APR-2004 11:30:00	-0.93	20-APR-2004 11:30:00	-2.10	20-APR-2004 11:30:00	-2.40
20-APR-2004 11:45:00	-0.87	20-APR-2004 11:45:00	-2.13	20-APR-2004 11:45:00	-2.47
20-APR-2004 12:00:00	-0.67	20-APR-2004 12:00:00	-2.23	20-APR-2004 12:00:00	-2.33
20-APR-2004 12:15:00	-0.83	20-APR-2004 12:15:00	-2.27	20-APR-2004 12:15:00	-2.47
20-APR-2004 12:30:00	-0.87	20-APR-2004 12:30:00	-2.33	20-APR-2004 12:30:00	-2.33
20-APR-2004 12:45:00	-1.13	20-APR-2004 12:45:00	-2.33	20-APR-2004 12:45:00	-2.30
20-APR-2004 13:00:00	-0.93	20-APR-2004 13:00:00	-2.40	20-APR-2004 13:00:00	-2.30
20-APR-2004 13:15:00	-0.87	20-APR-2004 13:15:00	-2.40	20-APR-2004 13:15:00	-2.47
20-APR-2004 13:30:00	-0.67	20-APR-2004 13:30:00	-2.40	20-APR-2004 13:30:00	-2.33
20-APR-2004 13:45:00	-0.77	20-APR-2004 13:45:00	-2.33	20-APR-2004 13:45:00	-2.33
20-APR-2004 14:00:00	-0.73	20-APR-2004 14:00:00	-2.27	20-APR-2004 14:00:00	-2.33
20-APR-2004 14:15:00	-0.47	20-APR-2004 14:15:00	-2.33	20-APR-2004 14:15:00	-2.43
20-APR-2004 14:30:00	-0.60	20-APR-2004 14:30:00	-2.40	20-APR-2004 14:30:00	-2.53
20-APR-2004 14:45:00	-0.80	20-APR-2004 14:45:00	-2.40	20-APR-2004 14:45:00	-2.60
20-APR-2004 15:00:00	-0.60	20-APR-2004 15:00:00	-2.40	20-APR-2004 15:00:00	-2.60
20-APR-2004 15:15:00	-0.67	20-APR-2004 15:15:00	-2.33	20-APR-2004 15:15:00	-2.97
20-APR-2004 15:30:00	-0.67	20-APR-2004 15:30:00	-2.37	20-APR-2004 15:30:00	-2.74
20-APR-2004 15:45:00	-0.80	20-APR-2004 15:45:00	-2.41	20-APR-2004 15:45:00	-2.60
20-APR-2004 16:00:00	-0.87	20-APR-2004 16:00:00	-2.47	20-APR-2004 16:00:00	-2.67
20-APR-2004 16:15:00	-0.53	20-APR-2004 16:15:00	-2.53	20-APR-2004 16:15:00	-2.74
20-APR-2004 16:30:00	-0.53	20-APR-2004 16:30:00	-2.53	20-APR-2004 16:30:00	-2.67
20-APR-2004 16:45:00	-0.60	20-APR-2004 16:45:00	-2.60	20-APR-2004 16:45:00	-2.67
20-APR-2004 17:00:00	-0.73	20-APR-2004 17:00:00	-2.60	20-APR-2004 17:00:00	-2.74
20-APR-2004 17:15:00	-0.80	20-APR-2004 17:15:00	-2.67	20-APR-2004 17:15:00	-2.74

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
20-APR-2004 17:30:00	-0.87	20-APR-2004 17:30:00	-2.60	20-APR-2004 17:30:00	-2.80
20-APR-2004 17:45:00	-0.73	20-APR-2004 17:45:00	-2.60	20-APR-2004 17:45:00	-2.74
20-APR-2004 18:00:00	-0.80	20-APR-2004 18:00:00	-2.60	20-APR-2004 18:00:00	-2.80
20-APR-2004 18:15:00	-0.53	20-APR-2004 18:15:00	-2.60	20-APR-2004 18:15:00	-2.80
20-APR-2004 18:30:00	-0.80	20-APR-2004 18:30:00	-2.60	20-APR-2004 18:30:00	-2.77
20-APR-2004 18:45:00	-0.80	20-APR-2004 18:45:00	-2.60	20-APR-2004 18:45:00	-2.80
20-APR-2004 19:00:00	-0.80	20-APR-2004 19:00:00	-2.67	20-APR-2004 19:00:00	-2.80
20-APR-2004 19:15:00	-0.87	20-APR-2004 19:15:00	-2.61	20-APR-2004 19:15:00	-2.83
20-APR-2004 19:30:00	-0.93	20-APR-2004 19:30:00	-2.67	20-APR-2004 19:30:00	-2.87
20-APR-2004 19:45:00	-0.73	20-APR-2004 19:45:00	-2.60	20-APR-2004 19:45:00	-2.93
20-APR-2004 20:00:00	-0.80	20-APR-2004 20:00:00	-2.67	20-APR-2004 20:00:00	-2.90
20-APR-2004 20:15:00	-0.73	20-APR-2004 20:15:00	-2.60	20-APR-2004 20:15:00	-2.87
20-APR-2004 20:30:00	-0.73	20-APR-2004 20:30:00	-2.60	20-APR-2004 20:30:00	-2.80
20-APR-2004 20:45:00	-1.00	20-APR-2004 20:45:00	-2.67	20-APR-2004 20:45:00	-2.74
20-APR-2004 21:00:00	-0.87	20-APR-2004 21:00:00	-2.60	20-APR-2004 21:00:00	-2.77
20-APR-2004 21:15:00	-0.80	20-APR-2004 21:15:00	-2.60	20-APR-2004 21:15:00	-2.77
20-APR-2004 21:30:00	-1.00	20-APR-2004 21:30:00	-2.67	20-APR-2004 21:30:00	-2.74
20-APR-2004 21:45:00	-1.13	20-APR-2004 21:45:00	-2.60	20-APR-2004 21:45:00	-2.87
20-APR-2004 22:00:00	-0.57	20-APR-2004 22:00:00	-2.60	20-APR-2004 22:00:00	-2.80
20-APR-2004 22:15:00	-0.73	20-APR-2004 22:15:00	-2.53	20-APR-2004 22:15:00	-2.80
20-APR-2004 22:30:00	-0.87	20-APR-2004 22:30:00	-2.53	20-APR-2004 22:30:00	-2.80
20-APR-2004 22:45:00	-1.07	20-APR-2004 22:45:00	-2.53	20-APR-2004 22:45:00	-2.67
20-APR-2004 23:00:00	-0.97	20-APR-2004 23:00:00	-2.60	20-APR-2004 23:00:00	-2.74
20-APR-2004 23:15:00	-0.93	20-APR-2004 23:15:00	-2.67	20-APR-2004 23:15:00	-2.70
20-APR-2004 23:30:00	-0.73	20-APR-2004 23:30:00	-2.53	20-APR-2004 23:30:00	-2.74
20-APR-2004 23:45:00	-0.60	20-APR-2004 23:45:00	-2.53	20-APR-2004 23:45:00	-2.67
21-APR-2004 00:00:00	**-0.80**	**21-APR-2004 00:00:00**	**-2.60**	**21-APR-2004 00:00:00**	**-2.67**
21-APR-2004 00:15:00	-1.07	21-APR-2004 00:15:00	-2.47	21-APR-2004 00:15:00	-2.74
21-APR-2004 00:30:00	-1.00	21-APR-2004 00:30:00	-2.47	21-APR-2004 00:30:00	-2.74
21-APR-2004 00:45:00	-0.90	21-APR-2004 00:45:00	-2.47	21-APR-2004 00:45:00	-2.67
21-APR-2004 01:00:00	-0.80	21-APR-2004 01:00:00	-2.53	21-APR-2004 01:00:00	-2.60
21-APR-2004 01:15:00	-0.67	21-APR-2004 01:15:00	-2.47	21-APR-2004 01:15:00	-2.67
21-APR-2004 01:30:00	-0.53	21-APR-2004 01:30:00	-2.47	21-APR-2004 01:30:00	-2.74
21-APR-2004 01:45:00	-0.63	21-APR-2004 01:45:00	-2.47	21-APR-2004 01:45:00	-2.87
21-APR-2004 02:00:00	-0.60	21-APR-2004 02:00:00	-2.47	21-APR-2004 02:00:00	-2.74
21-APR-2004 02:15:00	-0.67	21-APR-2004 02:15:00	-2.47	21-APR-2004 02:15:00	-2.74
21-APR-2004 02:30:00	-1.03	21-APR-2004 02:30:00	-2.47	21-APR-2004 02:30:00	-2.74
21-APR-2004 02:45:00	-1.00	21-APR-2004 02:45:00	-2.40	21-APR-2004 02:45:00	-2.67
21-APR-2004 03:00:00	-0.70	21-APR-2004 03:00:00	-2.47	21-APR-2004 03:00:00	-2.74
21-APR-2004 03:15:00	-0.53	21-APR-2004 03:15:00	-2.53	21-APR-2004 03:15:00	-2.74
21-APR-2004 03:30:00	-0.50	21-APR-2004 03:30:00	-2.47	21-APR-2004 03:30:00	-2.74
21-APR-2004 03:45:00	-0.73	21-APR-2004 03:45:00	-2.50	21-APR-2004 03:45:00	-2.67
21-APR-2004 04:00:00	-0.87	21-APR-2004 04:00:00	-2.53	21-APR-2004 04:00:00	-2.67
21-APR-2004 04:15:00	-0.57	21-APR-2004 04:15:00	-2.47	21-APR-2004 04:15:00	-2.60
21-APR-2004 04:30:00	-0.67	21-APR-2004 04:30:00	-2.50	21-APR-2004 04:30:00	-2.60
21-APR-2004 04:45:00	-0.73	21-APR-2004 04:45:00	-2.57	21-APR-2004 04:45:00	-2.60
21-APR-2004 05:00:00	-0.60	21-APR-2004 05:00:00	-2.53	21-APR-2004 05:00:00	-2.60
21-APR-2004 05:15:00	-0.83	21-APR-2004 05:15:00	-2.53	21-APR-2004 05:15:00	-2.67
21-APR-2004 05:30:00	-0.87	21-APR-2004 05:30:00	-2.47	21-APR-2004 05:30:00	-2.67
21-APR-2004 05:45:00	-0.77	21-APR-2004 05:45:00	-2.50	21-APR-2004 05:45:00	-2.67
21-APR-2004 06:00:00	-0.73	21-APR-2004 06:00:00	-2.47	21-APR-2004 06:00:00	-2.67
21-APR-2004 06:15:00	-0.87	21-APR-2004 06:15:00	-2.53	21-APR-2004 06:15:00	-2.67
21-APR-2004 06:30:00	-0.83	21-APR-2004 06:30:00	-2.50	21-APR-2004 06:30:00	-2.70
21-APR-2004 06:45:00	-0.73	21-APR-2004 06:45:00	-2.47	21-APR-2004 06:45:00	-2.74
21-APR-2004 07:00:00	-0.90	21-APR-2004 07:00:00	-2.53	21-APR-2004 07:00:00	-2.74
21-APR-2004 07:15:00	-0.77	21-APR-2004 07:15:00	-2.53	21-APR-2004 07:15:00	-2.70
21-APR-2004 07:30:00	-1.00	21-APR-2004 07:30:00	-2.53	21-APR-2004 07:30:00	-2.67
21-APR-2004 07:45:00	-0.90	21-APR-2004 07:45:00	-2.53	21-APR-2004 07:45:00	-2.70
21-APR-2004 08:00:00	-0.80	21-APR-2004 08:00:00	-2.60	21-APR-2004 08:00:00	-2.67
21-APR-2004 08:15:00	-0.87	21-APR-2004 08:15:00	-2.53	21-APR-2004 08:15:00	-2.67

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
21-APR-2004 08:30:00	-0.83	21-APR-2004 08:30:00	-2.57	21-APR-2004 08:30:00	-2.67
21-APR-2004 08:45:00	-1.00	21-APR-2004 08:45:00	-2.53	21-APR-2004 08:45:00	-2.74
21-APR-2004 09:00:00	-1.13	21-APR-2004 09:00:00	-2.53	21-APR-2004 09:00:00	-2.70
21-APR-2004 09:15:00	-0.90	21-APR-2004 09:15:00	-2.57	21-APR-2004 09:15:00	-2.80
21-APR-2004 09:30:00	-0.80	21-APR-2004 09:30:00	-2.53	21-APR-2004 09:30:00	-2.74
21-APR-2004 09:45:00	-0.80	21-APR-2004 09:45:00	-2.50	21-APR-2004 09:45:00	-2.74
21-APR-2004 10:00:00	-0.67	21-APR-2004 10:00:00	-2.53	21-APR-2004 10:00:00	-2.80
21-APR-2004 10:15:00	-0.90	21-APR-2004 10:15:00	-2.53	21-APR-2004 10:15:00	-2.74
21-APR-2004 10:30:00	-0.97	21-APR-2004 10:30:00	-2.53	21-APR-2004 10:30:00	-2.67
21-APR-2004 10:45:00	-0.80	21-APR-2004 10:45:00	-2.53	21-APR-2004 10:45:00	-2.60
21-APR-2004 11:00:00	-0.87	21-APR-2004 11:00:00	-2.53	21-APR-2004 11:00:00	-2.67
21-APR-2004 11:15:00	-0.67	21-APR-2004 11:15:00	-2.50	21-APR-2004 11:15:00	-2.67
21-APR-2004 11:30:00	-0.60	21-APR-2004 11:30:00	-2.60	21-APR-2004 11:30:00	-2.56
21-APR-2004 11:45:00	-0.63	21-APR-2004 11:45:00	-2.53	21-APR-2004 11:45:00	-2.67
21-APR-2004 12:00:00	-0.67	21-APR-2004 12:00:00	-2.47	21-APR-2004 12:00:00	-2.63
21-APR-2004 12:15:00	-0.67	21-APR-2004 12:15:00	-2.43	21-APR-2004 12:15:00	-2.67
21-APR-2004 12:30:00	-0.80	21-APR-2004 12:30:00	-2.33	21-APR-2004 12:30:00	-2.67
21-APR-2004 12:45:00	-0.87	21-APR-2004 12:45:00	-2.33	21-APR-2004 12:45:00	-2.60
21-APR-2004 13:00:00	-0.80	21-APR-2004 13:00:00	-2.30	21-APR-2004 13:00:00	-2.74
21-APR-2004 13:15:00	-0.70	21-APR-2004 13:15:00	-2.27	21-APR-2004 13:15:00	-2.67
21-APR-2004 13:30:00	-0.77	21-APR-2004 13:30:00	-2.20	21-APR-2004 13:30:00	-2.67
21-APR-2004 13:45:00	-0.80	21-APR-2004 13:45:00	-2.30	21-APR-2004 13:45:00	-2.67
21-APR-2004 14:00:00	-0.90	21-APR-2004 14:00:00	-2.33	21-APR-2004 14:00:00	-2.70
21-APR-2004 14:15:00	-0.80	21-APR-2004 14:15:00	-2.23	21-APR-2004 14:15:00	-2.87
21-APR-2004 14:30:00	-0.53	21-APR-2004 14:30:00	-2.33	21-APR-2004 14:30:00	-2.67
21-APR-2004 14:45:00	-0.53	21-APR-2004 14:45:00	-2.27	21-APR-2004 14:45:00	-2.67
21-APR-2004 15:00:00	-0.87	21-APR-2004 15:00:00	-2.27	21-APR-2004 15:00:00	-2.63
21-APR-2004 15:15:00	-0.80	21-APR-2004 15:15:00	-2.27	21-APR-2004 15:15:00	-2.60
21-APR-2004 15:30:00	-0.80	21-APR-2004 15:30:00	-2.33	21-APR-2004 15:30:00	-2.63
21-APR-2004 15:45:00	-0.87	21-APR-2004 15:45:00	-2.40	21-APR-2004 15:45:00	-2.53
21-APR-2004 16:00:00	-0.77	21-APR-2004 16:00:00	-2.40	21-APR-2004 16:00:00	-2.53
21-APR-2004 16:15:00	-0.77	21-APR-2004 16:15:00	-2.37	21-APR-2004 16:15:00	-2.50
21-APR-2004 16:30:00	-0.67	21-APR-2004 16:30:00	-2.33	21-APR-2004 16:30:00	-2.47
21-APR-2004 16:45:00	-0.73	21-APR-2004 16:45:00	-2.40	21-APR-2004 16:45:00	-2.50
21-APR-2004 17:00:00	-0.67	21-APR-2004 17:00:00	-2.40	21-APR-2004 17:00:00	-2.40
21-APR-2004 17:15:00	-0.93	21-APR-2004 17:15:00	-2.40	21-APR-2004 17:15:00	-2.47
21-APR-2004 17:30:00	-1.00	21-APR-2004 17:30:00	-2.33	21-APR-2004 17:30:00	-2.47
21-APR-2004 17:45:00	-0.90	21-APR-2004 17:45:00	-2.33	21-APR-2004 17:45:00	-2.47
21-APR-2004 18:00:00	-0.77	21-APR-2004 18:00:00	-2.37	21-APR-2004 18:00:00	-2.40
21-APR-2004 18:15:00	-0.80	21-APR-2004 18:15:00	-2.33	21-APR-2004 18:15:00	-2.40
21-APR-2004 18:30:00	-0.67	21-APR-2004 18:30:00	-2.33	21-APR-2004 18:30:00	-2.43
21-APR-2004 18:45:00	-0.77	21-APR-2004 18:45:00	-2.27	21-APR-2004 18:45:00	-2.40
21-APR-2004 19:00:00	-0.87	21-APR-2004 19:00:00	-2.33	21-APR-2004 19:00:00	-2.47
21-APR-2004 19:15:00	-0.73	21-APR-2004 19:15:00	-2.30	21-APR-2004 19:15:00	-2.40
21-APR-2004 19:30:00	-0.80	21-APR-2004 19:30:00	-2.27	21-APR-2004 19:30:00	-2.40
21-APR-2004 19:45:00	-0.73	21-APR-2004 19:45:00	-2.33	21-APR-2004 19:45:00	-2.50
21-APR-2004 20:00:00	-0.83	21-APR-2004 20:00:00	-2.27	21-APR-2004 20:00:00	-2.33
21-APR-2004 20:15:00	-0.87	21-APR-2004 20:15:00	-2.27	21-APR-2004 20:15:00	-2.33
21-APR-2004 20:30:00	-0.73	21-APR-2004 20:30:00	-2.20	21-APR-2004 20:30:00	-2.33
21-APR-2004 20:45:00	-0.73	21-APR-2004 20:45:00	-2.20	21-APR-2004 20:45:00	-2.27
21-APR-2004 21:00:00	-0.77	21-APR-2004 21:00:00	-2.23	21-APR-2004 21:00:00	-2.27
21-APR-2004 21:15:00	-0.70	21-APR-2004 21:15:00	-2.27	21-APR-2004 21:15:00	-2.33
21-APR-2004 21:30:00	-0.67	21-APR-2004 21:30:00	-2.20	21-APR-2004 21:30:00	-2.33
21-APR-2004 21:45:00	-0.80	21-APR-2004 21:45:00	-2.13	21-APR-2004 21:45:00	-2.30
21-APR-2004 22:00:00	-0.87	21-APR-2004 22:00:00	-2.13	21-APR-2004 22:00:00	-2.27
21-APR-2004 22:15:00	-0.80	21-APR-2004 22:15:00	-2.13	21-APR-2004 22:15:00	-2.27
21-APR-2004 22:30:00	-0.73	21-APR-2004 22:30:00	-2.13	21-APR-2004 22:30:00	-2.20
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21-APR-2004 23:15:00	-0.73	21-APR-2004 23:15:00	-2.13	21-APR-2004 23:15:00	-2.27

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
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21-APR-2004 23:45:00	-0.93	21-APR-2004 23:45:00	-2.17	21-APR-2004 23:45:00	-2.20
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22-APR-2004 00:15:00	-0.93	22-APR-2004 00:15:00	-2.17	22-APR-2004 00:15:00	-2.20
22-APR-2004 00:30:00	-0.73	22-APR-2004 00:30:00	-2.13	22-APR-2004 00:30:00	-2.20
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22-APR-2004 08:15:00	-0.73	22-APR-2004 08:15:00	-2.00	22-APR-2004 08:15:00	-2.07
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22-APR-2004 13:15:00	-0.73	22-APR-2004 13:15:00	-1.87	22-APR-2004 13:15:00	-1.93
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22-APR-2004 13:45:00	-0.80	22-APR-2004 13:45:00	-1.97	22-APR-2004 13:45:00	-2.07
22-APR-2004 14:00:00	-0.73	22-APR-2004 14:00:00	-2.00	22-APR-2004 14:00:00	-2.07
22-APR-2004 14:15:00	-0.60	22-APR-2004 14:15:00	-2.00	22-APR-2004 14:15:00	-2.00

	(CRCW - Lake)		(CRCW - River)		(Willow Springs)
	ECRCWGG1$PV		ECRCWGG2$PV		EWILSPNS$PV
Time	Elevation	Time	Elevation	Time	Elevation
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22-APR-2004 14:45:00	-0.73	22-APR-2004 14:45:00	-1.93	22-APR-2004 14:45:00	-1.93
22-APR-2004 15:00:00	-0.73	22-APR-2004 15:00:00	-2.07	22-APR-2004 15:00:00	-2.00
22-APR-2004 15:15:00	-0.73	22-APR-2004 15:15:00	-2.07	22-APR-2004 15:15:00	-1.93
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22-APR-2004 17:30:00	-0.83	22-APR-2004 17:30:00	-1.97	22-APR-2004 17:30:00	-2.07
22-APR-2004 17:45:00	-0.77	22-APR-2004 17:45:00	-2.07	22-APR-2004 17:45:00	-2.13
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22-APR-2004 18:15:00	-0.53	22-APR-2004 18:15:00	-1.97	22-APR-2004 18:15:00	-1.93
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22-APR-2004 19:15:00	-0.53	22-APR-2004 19:15:00	-1.93	22-APR-2004 19:15:00	-2.00
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22-APR-2004 21:45:00	-0.80	22-APR-2004 21:45:00	-1.87	22-APR-2004 21:45:00	-2.00
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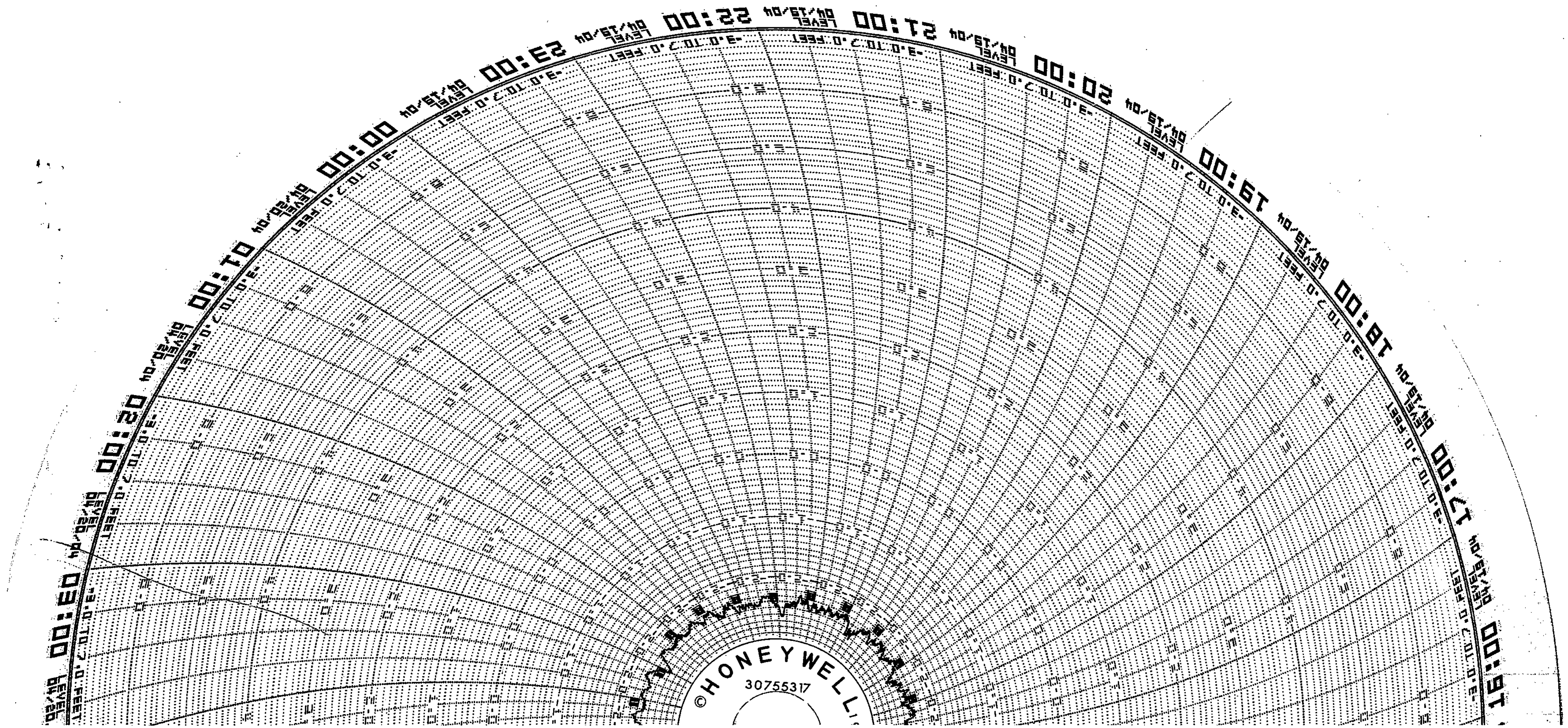
22-APR-2004 23:45:00	-0.73	22-APR-2004 23:45:00	-1.87	22-APR-2004 23:45:00	-2.00
23-APR-2004 00:00:00	**-0.70**	**23-APR-2004 00:00:00**	**-1.93**	**23-APR-2004 00:00:00**	**-2.07**

4/19



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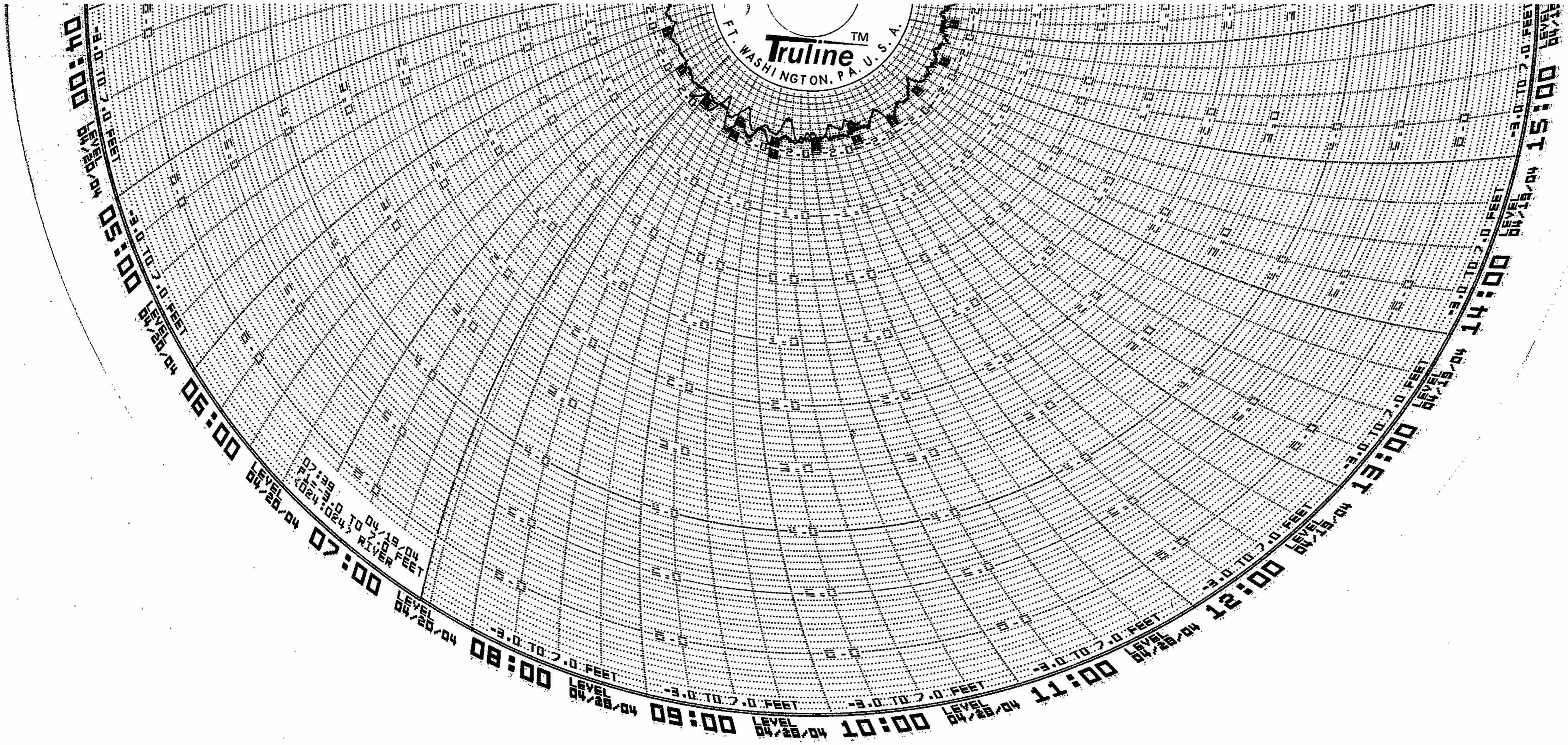
04/20/04
00:00
01:00
02:00
03:00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08:00
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11:00
12:00
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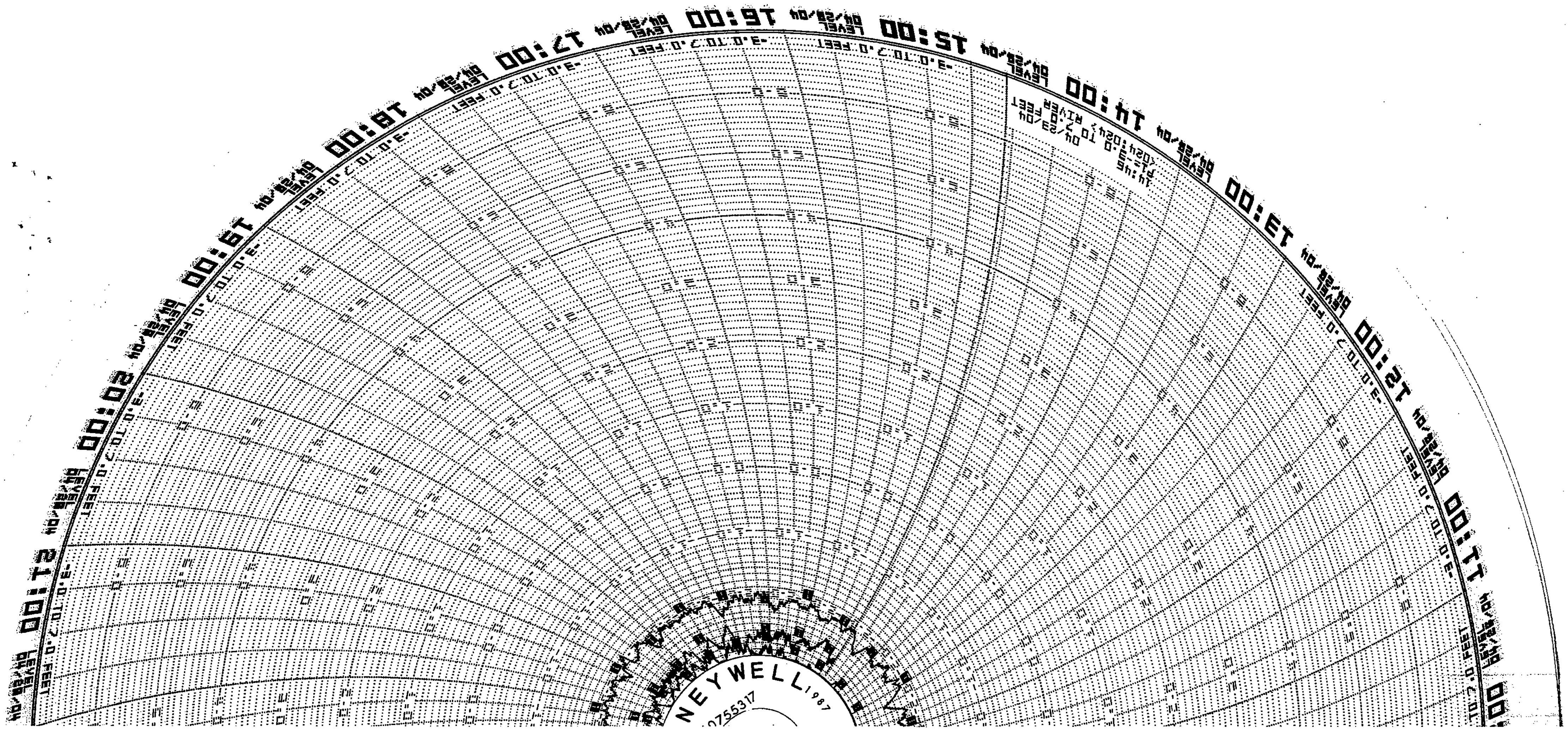
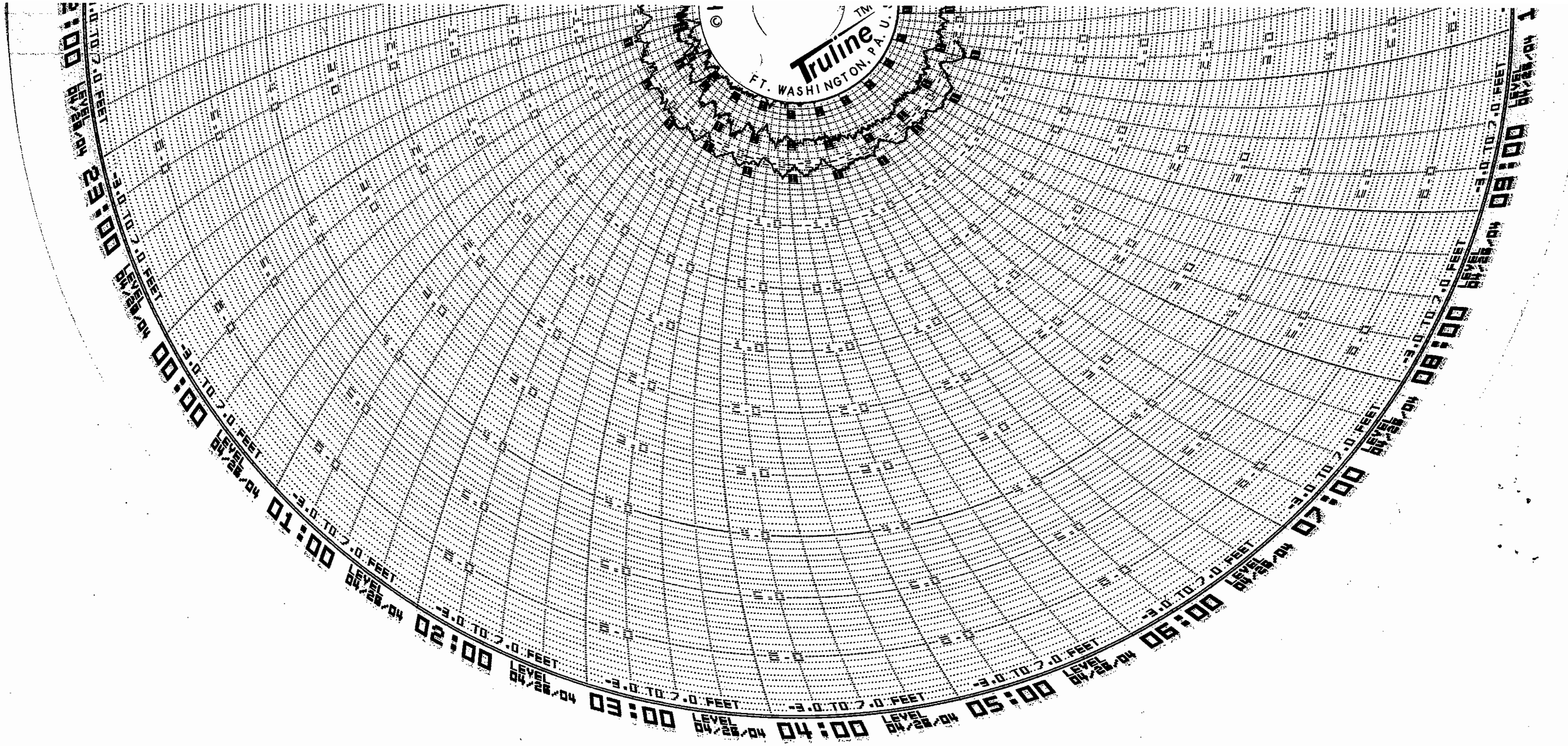
LEVEL 04/19/04

4/20

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06:00
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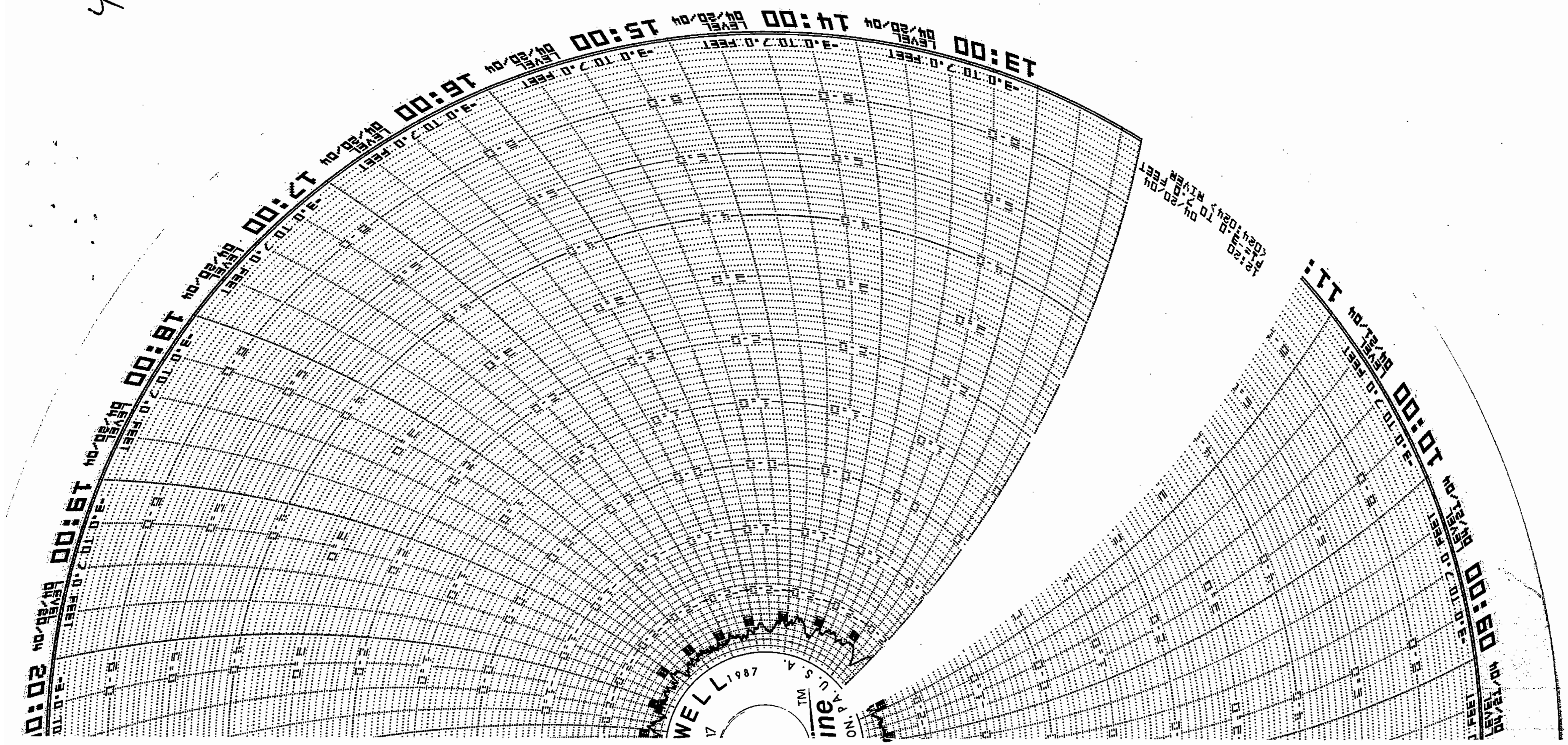
08:00
09:00
LEVEL
-3.0 TO 7.0 FEET

20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09:00 LEVEL 04/21/04 -3.0 TO 7.0 FEET
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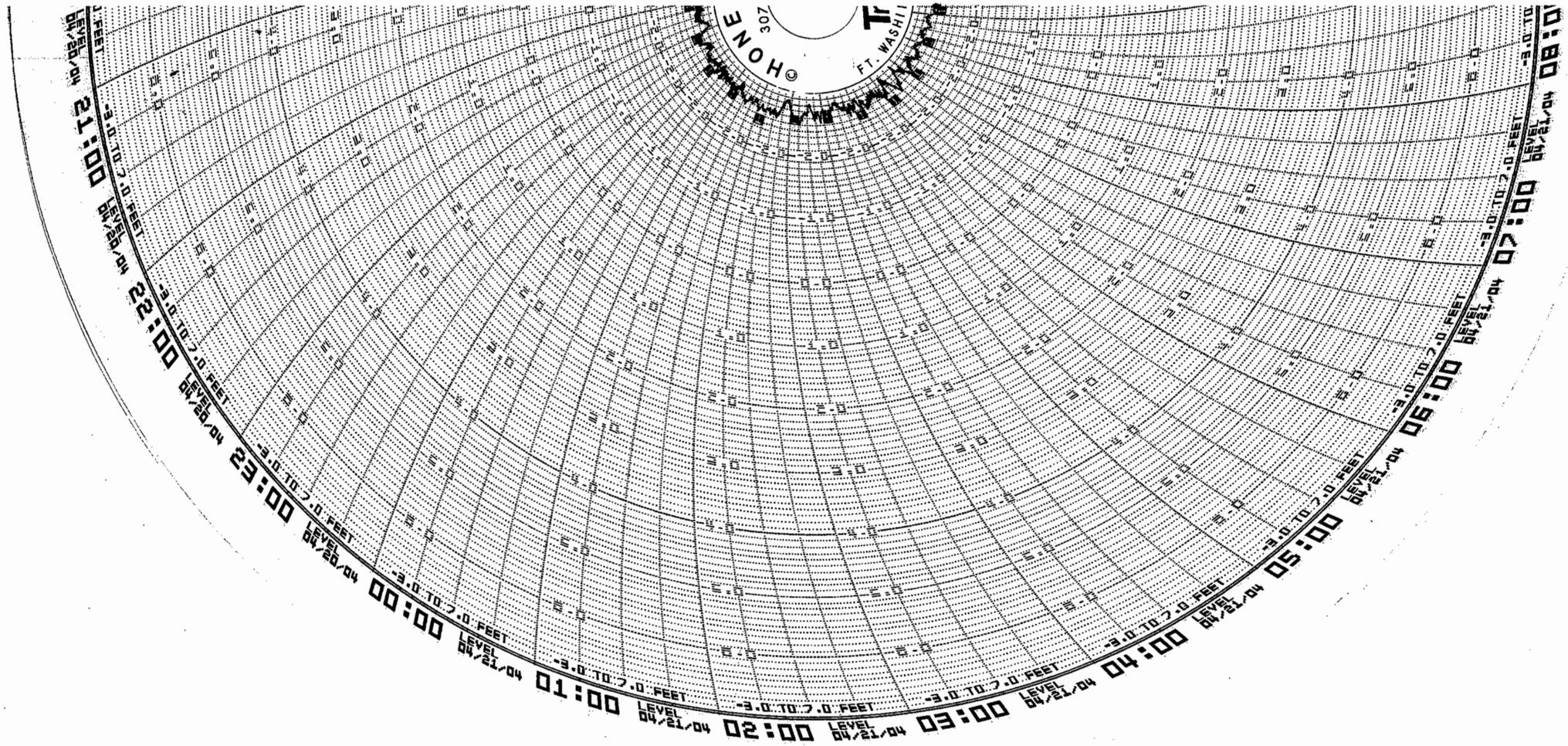
12:20 04/20/04
-3.0 TO 7.0 FEET
<024:024> RIVER

4/20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08:00
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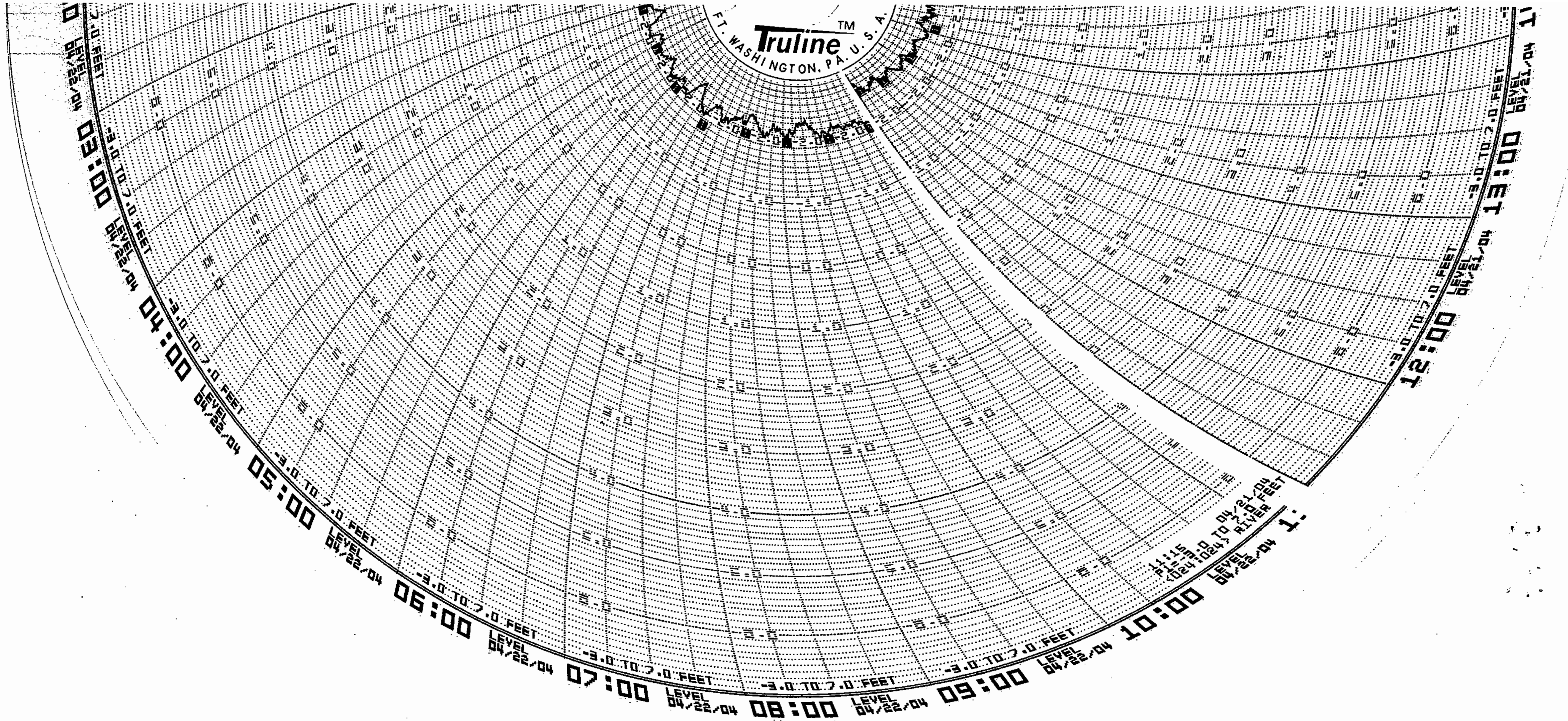
LEVEL
04/20/04
04/21/04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08:00
09:00
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LEVEL 04/22/04
LEVEL 04/21/04
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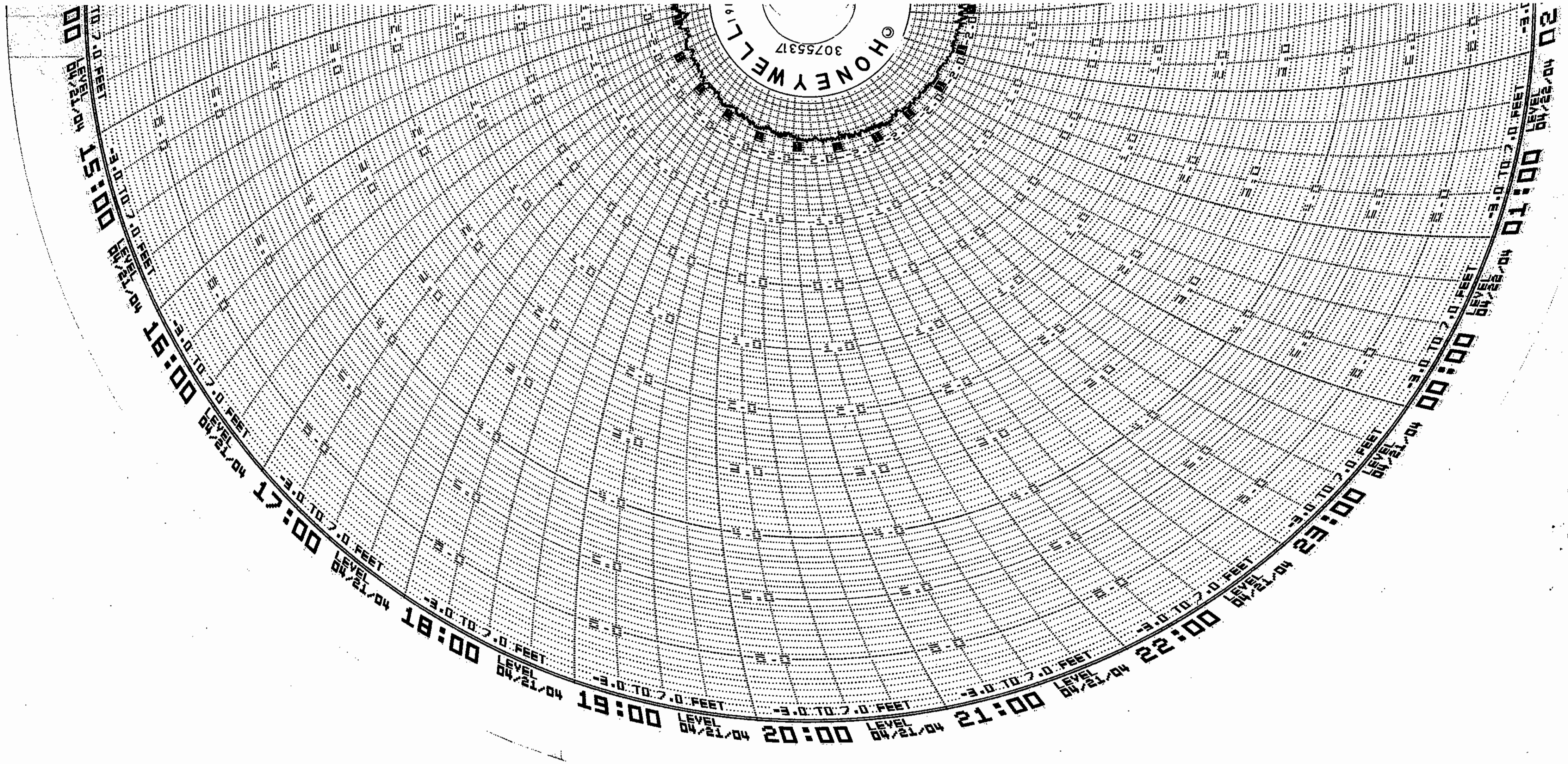
11:15
RIVER
04/21/04

4/22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19:00 LEVEL 04/21/04 -3.0 TO 7.0 FEET
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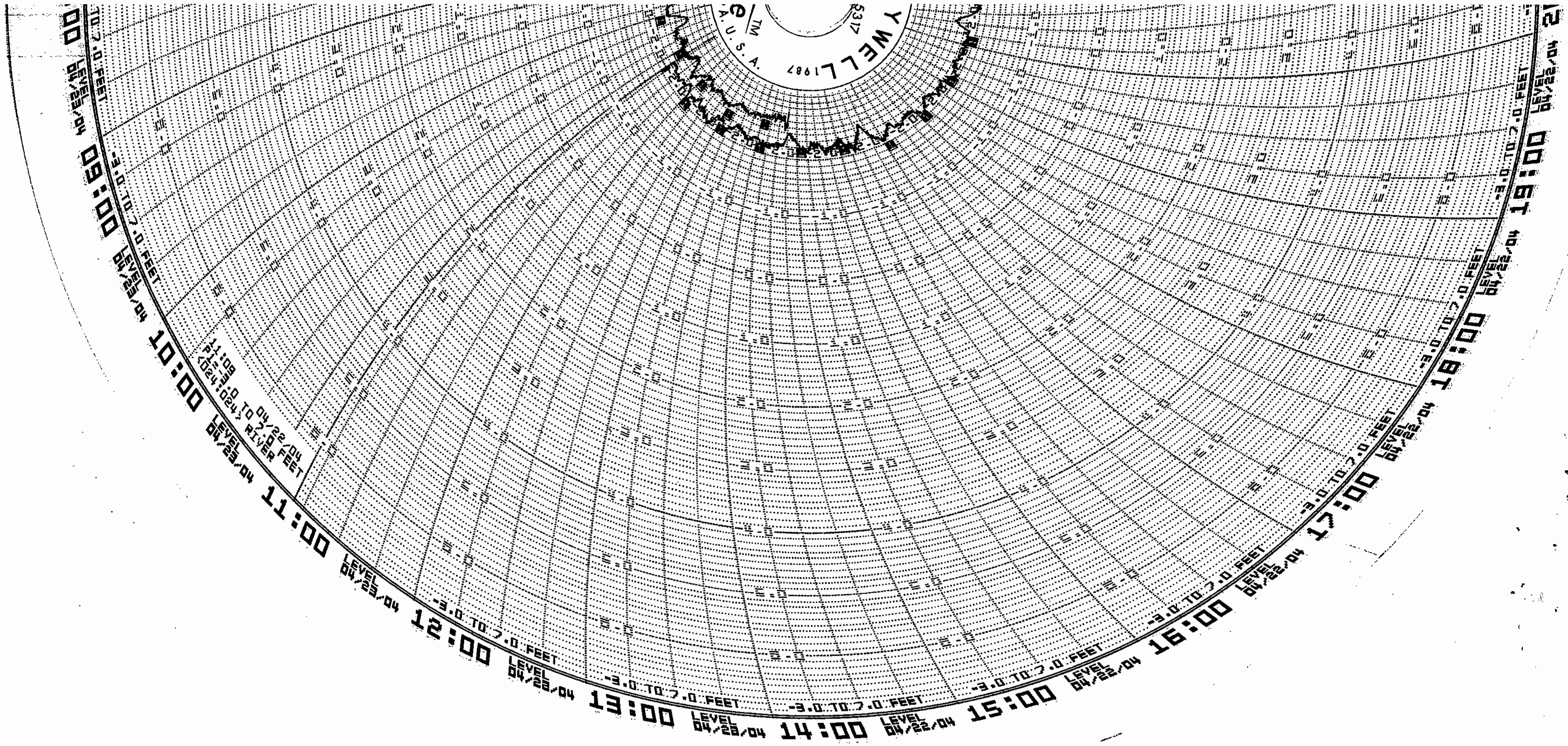
01:00 LEVEL 04/22/04 -3.0 TO 7.0 FEET

22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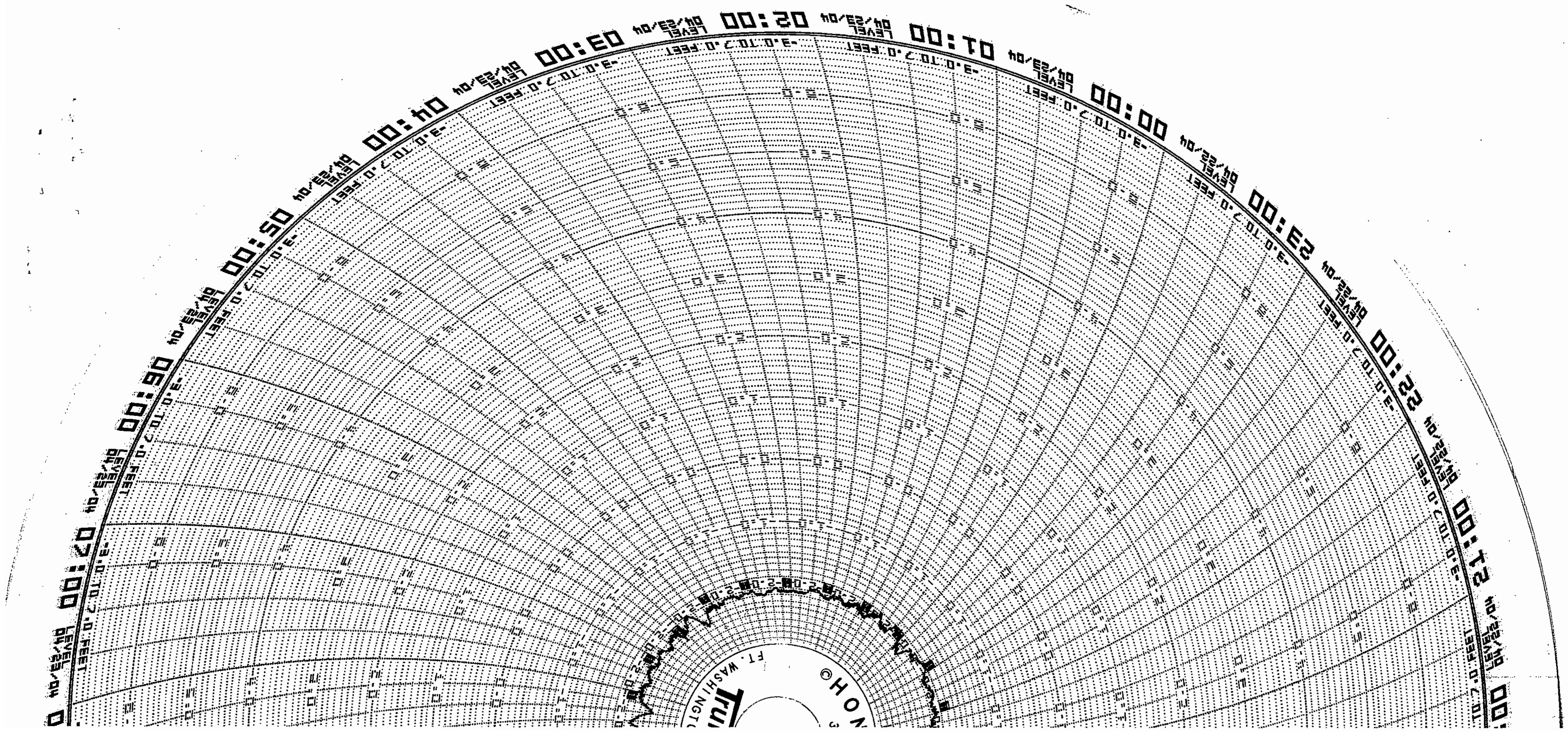
LEVEL
-3.0 TO 7.0 FEET

4/23

23



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06:00
05:00
04:00
03:00
02:00
01:00
00:00
23:00
22:00
21:00

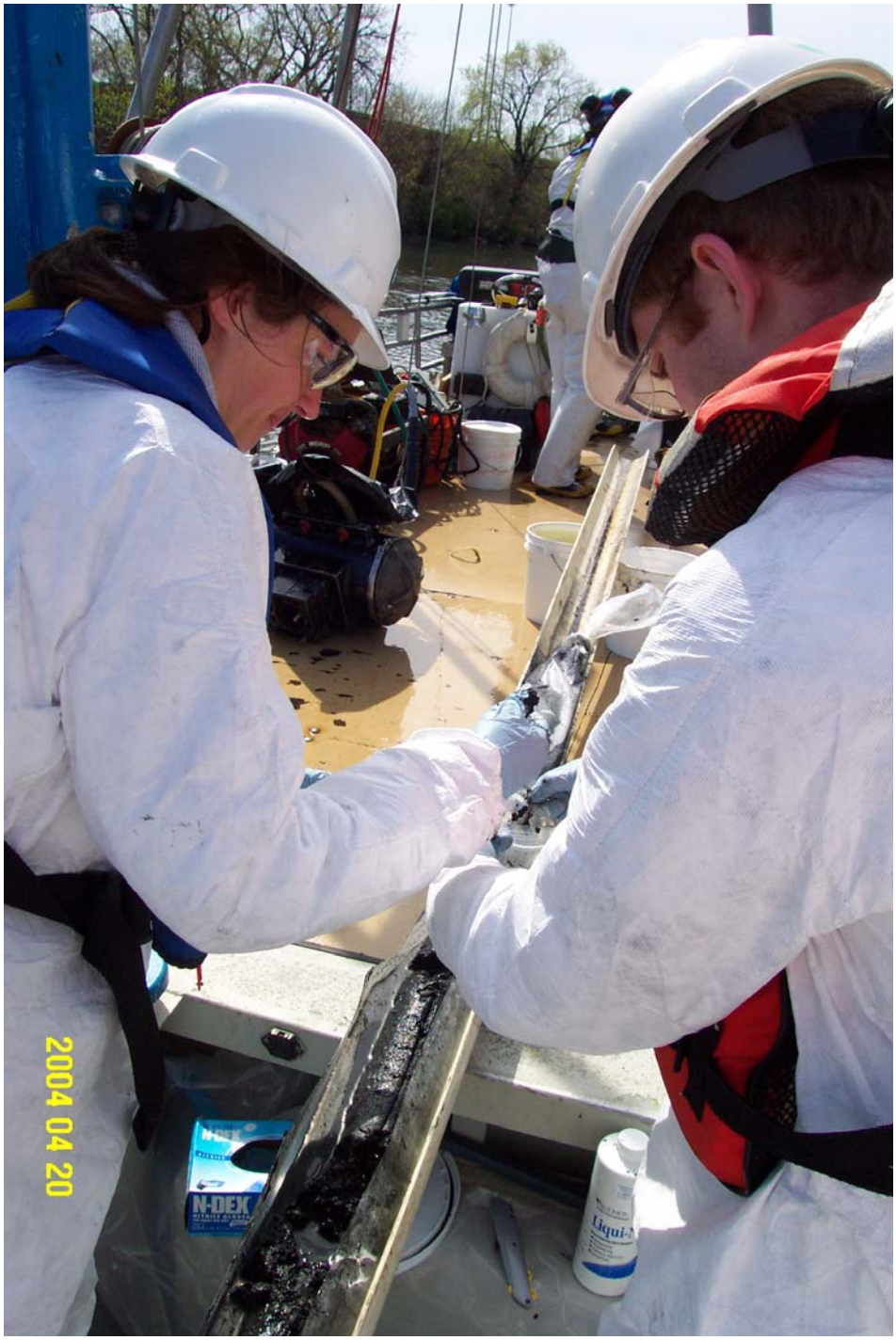
Appendix B

Sample Photographs

Date: April 21, 2004
Sample SF-2004-B01A

Date: April 21, 2004
Sample SF-2004-B01A

Date: April 20, 2004
Sample SF-2004-B02



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Date: April 20, 2004
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Date: April 20, 2004
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Date: April 20, 2004
Sample SF-2004-B03

Date: April 21, 2004
Sample SF-2004-B04

Date: April 21, 2004
Sample SF-2004-B05

Date: April 21, 2004
Sample SF-2004-B06

Date: April 21, 2004
Sample SF-2004-B06

Date: April 21, 2004
Sample SF-2004-B07

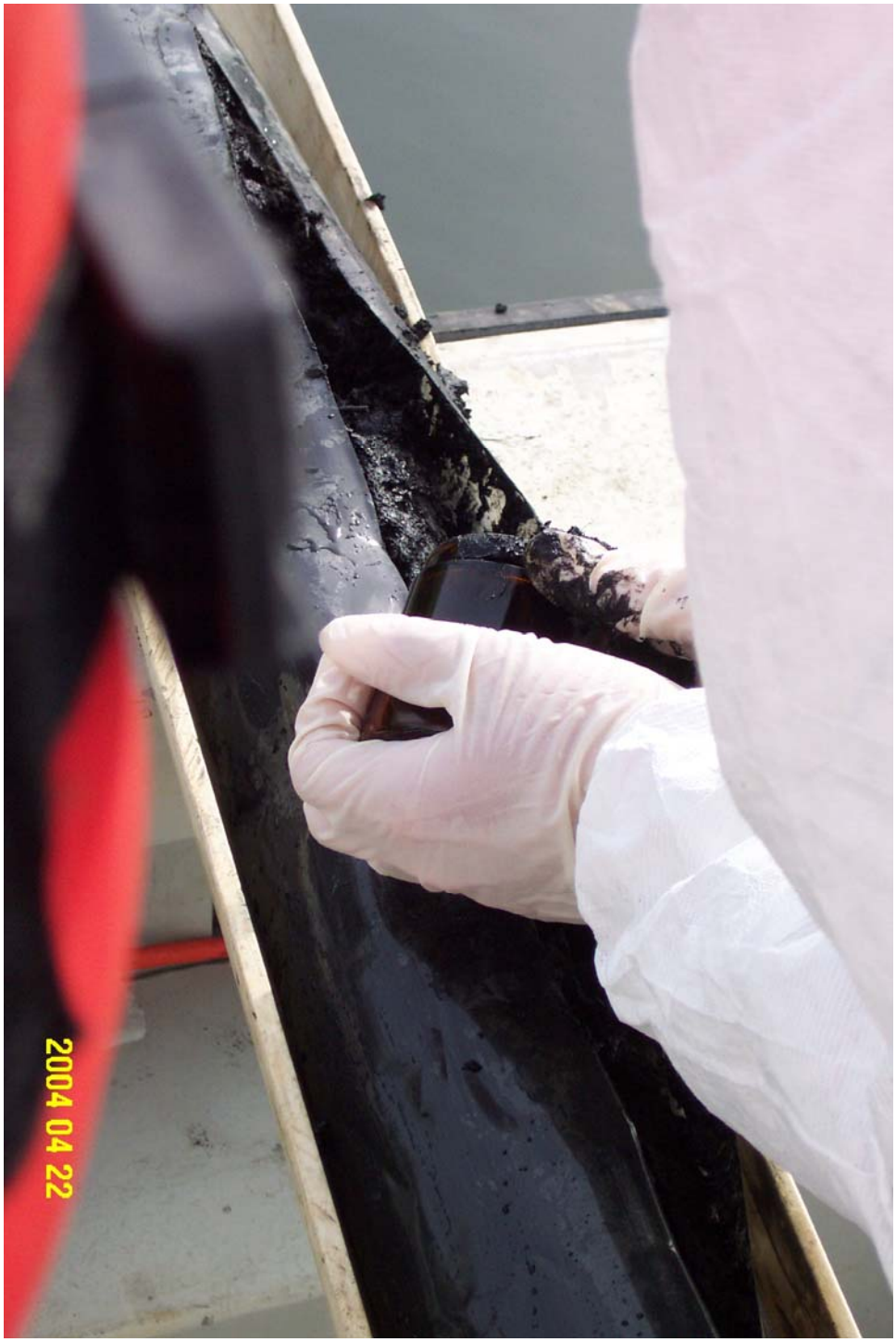
Date: April 21, 2004
Sample SF-2004-B08

Date: April 21, 2004
Sample SF-2004-B09

Date: April 22, 2004
Sample SF-2004-B10

Date: April 22, 2004
Sample SF-2004-B10

Date: April 22, 2004
Sample SF-2004-B11



Date: April 22, 2004
Sample SF-2004-B12

Date: April 22, 2004
Sample SF-2004-B13

Date: April 20, 2004
Sample SF-2004-G01

Date: April 20, 2004
Sample SF-2004-G02

Date: April 21, 2004
Sample SF-2004-G03

Date: April 21, 2004
Sample SF-2004-G04

Date: April 21, 2004
Sample SF-2004-G04

Date: April 22, 2004
Sample SF-2004-G05

Appendix C

Soil Boring Logs and Field Notes

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B01

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 571.41
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 14.2
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BGS): -5.66
Drilling Date: Start: 4/20/04 **End:** 4/20/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.84 E 87.67
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			571.4 / 0					
	1	24/18.93		15.4	—		OL	CLAY-5yr 2.5/1, wet, soft, little fine sand and silt, organics
	2	24/18.93		20.9	—			
	3	24/18.93	566.4 / 5	40.5	—			
	4	24/18.93		50.4	—			
	5	24/18.93		35.7	—		OL	CLAY-5yr 2.5/1, wet, soft, hydrocarbon odor, little fine sand and silt, organics
	6	24/18.93	561.4 / 10	250.3	—			
	7	26.4/20.82		237	—			
			556.4 / 15					End of boring @ 14.2 feet below riverbed
			551.4					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 10 feet to 12 feet below riverbed. Sample was not analyzed by laboratory; instead, CDM collected samples at location B01A and those samples were analyzed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/22/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B01a

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 570.47
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 12.9
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BS): -6.6
Drilling Date: Start: 4/21/04 **End:** 4/21/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.84 E 87.67
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			570.5					
	1	24/19.53	0	32.1	—		OL	CLAY-5yr 2.5/1, saturated, soft, odor, little fine sand and silt, organics
	2	24/19.53		194.2	—		OL	CLAY-5yr 2.5/1, wet, soft, odor, little fine sand and silt, organics
	3	24/19.53	565.5 5	155	—			
	4	24/19.53		186	—			
	5	24/19.53		221	—			
	6	34.8/28.33	560.5 10	529	—			
			555.5 15					End of boring @ 12.9 feet below riverbed
			550.5					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 10 feet to 12 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B02

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 573.13
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 16
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BS): -4.16
Drilling Date: Start: 4/20/04 **End:** 4/20/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.84 E 87.67
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			573.1					
	1	24/24	0	16.8	—		OL	CLAY-5yr 2.5/1, wet, soft, trace sand and silt, organics, hair and bone
	2	24/24		25.1	—			
	3	24/24	568.1 5	69.0	—			
	4	24/24		66.2	—			
	5	24/24		43.3	—			
	6	24/24	563.1 10	23.7	—			
	7	24/24		14.8	—			
	8	24/24	558.1 15	7.1	—		OL	CLAY-5yr 5/1, wet, soft, some silt
								End of boring @ 16 feet below riverbed
			553.1					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 4 feet to 6 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B03

Client: USACE
Project Location: Chicago, IL
Project Name: South Branch South Fork, Chicago River
Project Number:

Drilling Contractor: Aqua Survey
Drilling Method/Rig: Vibracore/Vibracore
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Drilling Date: Start: 4/20/04 **End:** 4/20/04
Borehole Coordinates:
N 41.84 E 87.66

Riverbed Elevation (ft.): 564.77
Total Depth (ft.): 11.1
Depth to Riverbed (ft. BS): -12.5
Abandonment Method: N/A
Field Screening Instrument: PID
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			564.8					
	1	24/20.76	0	11.3	—		OL	CLAY-5yr 2.5/1, saturated, soft, trace soil, trace silt, organics, plastic and garbage
	2	24/20.76		60.4	—		OL	CLAY-5yr 2.5/1, saturated, soft, trace soil, trace silt, organics
	3	36/31.14	559.8 5	126.2	—		OL	CLAY-5yr 2.5/1, wet, soft, trace soil, trace silt, organics, hair
	4	24/20.76		59.0	—			
	5	25.2/21.79	554.8 10	109.2	—			
								End of boring @ 11.1 feet below riverbed
			549.8 15					
			544.8					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 4 feet to 6 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B04

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 564.84
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 9.5
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BS): -12.2
Drilling Date: Start: 4/21/04 **End:** 4/21/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.84 E 87.66
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			564.8					
	1	24/17.68	0	44.7	—		OL	CLAY-5yr 2.5/1, saturated, soft, odor, trace sand and gravel, organics
	2	24/17.68		239	—		SM	SAND-5yr 2.5/1, wet, loose, odor, some clay and silt, foil, hair, and organics
	3	24/17.68	559.8 5	414	—		OL	CLAY-5yr 2.5/1, wet, soft, odor, trace sand, foil, hair, and organics
	4	24/17.68		229	—			
	5	18/13.26		302	—			
			554.8 10					End of boring @ 9.5 feet below riverbed
			549.8 15					
			544.8					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 4 feet to 6 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B05

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 565.69
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 10
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BGS): -11.4
Drilling Date: Start: 4/21/04 **End:** 4/21/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.84 E 87.66
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			565.7					
	1	24/17.52	0	40.5	—		OL	CLAY-5yr 2.5/1, wet, soft, odor, little gravel, hair, foil, and organics
	2	36/26.28	560.7	93	—			
	3	24/17.52	5	136	—		OL	CLAY-5yr 2.5/1, wet, soft, odor, some gravel and sand, foil, hair, and organics
	4	36/26.28	555.7	101.4	—		OL	CLAY-5yr 2.5/1, wet, soft, odor, foil, hair, and organics
			10					End of boring @ 10 feet below riverbed
			550.7					
			15					
			545.7					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
- FR - Foam Rotary
- MR - Mud Rotary
- RC - Reverse Circulation
- CT - Cable Tool
- JET - Jetting
- D - Driving
- DTC - Drill Through Casing

SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Sediment sample taken from 4 feet to 6 feet below riverbed. Took duplicate sample.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B06

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 569.5
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 8.3
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BS): -7.5
Drilling Date: Start: 4/21/04 **End:** 4/21/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.84 E 87.66
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			569.5					
	1	24/19.02	0	0.3	—		CL	2" CLAY-7.5yr 6/1, wet, soft, trace silt
							GM	GRAVEL-5yr 2.5/1, saturated, loose, odor, some sand, oily sheen
	2	24/19.02		4.4	—			
	3	24/19.02	564.5 5	5.8	—			
							CL	CLAY- 7.5yr 6/1, wet, soft, trace silt
	4	26.4/20.93		29.3	—		GM	GRAVEL-5yr 2.5/1, saturated, loose, odor, some sand, oily sheen, trash
								End of boring @ 8.3 feet below riverbed
			559.5 10					
			554.5 15					
			549.5					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 6 feet to 8 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B07

Client: USACE
Project Location: Chicago, IL
Project Name: South Branch South Fork, Chicago River
Project Number:

Drilling Contractor: Aqua Survey
Drilling Method/Rig: Vibracore/Vibracore
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Drilling Date: Start: 4/21/04 **End:** 4/21/04
Borehole Coordinates:
N 41.83 E 87.66
Riverbed Elevation (ft.): 573.2
Total Depth (ft.): 13.8
Depth to Riverbed (ft. BS): -3.7
Abandonment Method: N/A
Field Screening Instrument: PID
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			573.2					
	1	24/13.04	0	22.3	—		SM	SAND-5yr 2.5/1, wet, soft, wood, and organics
	2	24/13.04		22.3	—			
	3	24/13.04	568.2 5	30.7	—		GM	GRAVEL-5yr 2.5/1, wet, loose, odor, some silty clay
	4	24/13.04		43.4	—		OL	CLAY-5yr 2.5/1, wet, soft, trace some sand and silt, hair, and organics
	5	24/13.04		33.5	—			
	6	45.6/24.78	563.2 10	43.3	—		OL	CLAY-5yr 2.5/1, wet, soft, odor, trace sand and silt, organics
			558.2 15					End of boring @ 13.8 feet below riverbed
			553.2					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 6 feet to 8 feet below riverbed and MS/MSD.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B08

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 569.85
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 6.6
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BS): -7.4
Drilling Date: Start: 4/21/04 **End:** 4/21/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.83 E 87.66
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			569.9					
	1	24/14.54	0	16.8	—		SM	SAND-5yr 2.5/1, wet, loose, odor
	2	24/14.54		53.3	—			
							OL	CLAY-5yr 2.5/1, wet, odor, organics, hair, and trash
	3	31.2/18.91	564.9 5	63.2	—			
							SM	SAND-5yr 2.5/1, wet, loose, odor, organics
								End of boring @ 6.6 feet below riverbed
			559.9 10					
			554.9 15					
			549.9					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 4 feet to 6 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B09

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 564.83
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 9
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BS): -12
Drilling Date: Start: 4/21/04 **End:** 4/21/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.83 E 87.66
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			564.8 0					
	1	24/16		37.7	—		SM	SAND-5yr 2.5/1, wet, loose, hair, and organics with wood
	2	24/16		50.4	—		OL	CLAY-5yr 2.5/1, wet, soft, hair, organics with roots
	3	24/16	559.8 5	21.9	—			
	4	36/24		53.3	—			
			554.8 10					End of boring @ 9 feet below riverbed
			549.8 15					
			544.8					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 6 feet to 8 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B10

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 573.98
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 12.5
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BS): -3.5
Drilling Date: Start: 4/22/04 **End:** 4/22/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.83 E 87.66
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			574.0					
	1	24/17.09	0	27.9	—		SM	SAND-5yr 2.5/1, wet, loose, odor, and organics
	2	24/17.09		83.5	—			
	3	24/17.09	569.0 5	149.1	—		SM	SAND-5yr 2.5/1, wet, loose, odor, trace clay and silt, organics
	4	24/17.09		92.2	—			1" layer of white substance
	5	24/17.09		224	—		OL	CLAY-5yr 2.5/1, wet, soft, organic odor, sticks and leaves
	6	30/21.36	564.0 10	231	—			End of boring @ 12.5 feet below riverbed
			559.0 15					
			554.0					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
FR - Foam Rotary
MR - Mud Rotary
RC - Reverse Circulation
CT - Cable Tool
JET - Jetting
D - Driving
DTC - Drill Through Casing

SAMPLING TYPES:
AS - Auger/Grab Sample
CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 10 feet to 12 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B11

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 572.76
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 11
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BGS): -4.5
Drilling Date: Start: 4/22/04 **End:** 4/22/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.83 E 87.66
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			572.8 0					
	1	24/15.27		240.8	—		SM	SAND-5yr 2.5/1, saturated, loose, odor, some gravel, trash, and organics
							SM	SAND-5yr 2.5/1, wet, loose, odor, little silt and gravel, foil
	2	24/15.27		53.3	—		OL	CLAY-5yr 2.5/1, wet, soft, odor, little sand, foil, and organics
	3	24/15.27	567.8 5	53.5	—			
	4	24/15.27		76.2	—		OL	CLAY-5yr 2.5/1, wet, soft, odor, little sand, and organics
	5	36/22.91	562.8 10	173.8	—			
								End of boring @ 11 feet below riverbed
			557.8 15					
			552.8					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
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BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 0 feet to 2 feet below riverbed.

Reviewed by: **Date:**

BL_LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B12

Client: USACE
Project Location: Chicago, IL
Project Name: South Branch South Fork, Chicago River
Project Number:

Drilling Contractor: Aqua Survey
Drilling Method/Rig: Vibracore/Vibracore
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Drilling Date: Start: 4/22/04 **End:** 4/22/04
Borehole Coordinates:
N 41.83 E 87.66

Riverbed Elevation (ft.): 575.24
Total Depth (ft.): 15.8
Depth to Riverbed (ft. BS): -2.2
Abandonment Method: N/A
Field Screening Instrument: PID
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			575.2					
	1	24/13.67	0	8.5	---		OL	CLAY-5yr 2.5/1, wet, soft, odor, hair, organics
	2	24/13.67		4.4	---		OL	CLAY-5yr 2.5/1, saturated, soft, odor, hair, and organics
	3	24/13.67	570.2 5	32.1	---		OL	CLAY-5yr 2.5/1, saturated, very soft, odor, hair, and organics
	4	24/13.67		34.9	---			
	5	24/13.67		51.8	---		OL	CLAY-5yr 2.5/1, wet, soft, odor, foil, hair, and organics
	6	24/13.67	565.2 10	105.5	---		OL	CLAY-5yr 2.5/1, wet, soft, odor, hair, and organics
	7	24/13.67		221.3	---			
	8	21.6/12.30	560.2 15	237.5	---			
			555.2					End of boring @ 15.8 feet below riverbed

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
HSA - Hollow Stem Auger
SSA - Solid Stem Auger
HA - Hand Auger
AR - Air Rotary
DTR - Dual Tube Rotary
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SAMPLING TYPES:
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CS - California Sampler
BX - 1.5" Rock Core
NX - 2.1" Rock Core
GP - Geoprobe
HP - Hydro Punch
SS - Split Spoon
ST - Shelby Tube
WS - Wash Sample
OTHER:
AGS - Above Ground Surface

REMARKS

Sediment sample taken from 14 feet to 16 feet below riverbed.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

CAMP DRESSER & McKEE
CDM
125 South Wacker Drive, Suite 600
Chicago, Illinois 60606

CORING LOG
SF 2004 B13

Client: USACE
Project Name: South Branch South Fork, Chicago River
Project Location: Chicago, IL
Project Number:

Drilling Contractor: Aqua Survey
Riverbed Elevation (ft.): 560.89
Drilling Method/Rig: Vibracore/Vibracore
Total Depth (ft.): 5.5
Drillers: Mike Beaston, Leroy Brown & Mark Padover
Depth to Riverbed (ft. BS): -16.5
Drilling Date: Start: 4/22/04 **End:** 4/22/04
Abandonment Method: N/A
Borehole Coordinates:
Field Screening Instrument: PID
N 41.83 E 87.66
Logged By: David de Courcy-Bower

Sample Type	Sample Number	Sample Recovery (Inches)	Elev. Depth (ft.)	Field Instrument Reading (ppm)	Blows per 6 Inches	Graphic Log	Stratum Designation	Material Description
			560.9					
	1	66/24	0 / 555.9	49.0	—		SM	Sand-5yr 2.5/1, loose, odor, little gravel, trace clay, foil, glass, bone, organics and wood
			5 / 550.9					End of boring @ 5.5 feet below riverbed
			10 / 545.9					
			15 / 540.9					

EXPLANATION OF ABBREVIATIONS

DRILLING METHODS:
- HSA - Hollow Stem Auger
- SSA - Solid Stem Auger
- HA - Hand Auger
- AR - Air Rotary
- DTR - Dual Tube Rotary
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- MR - Mud Rotary
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- JET - Jetting
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SAMPLING TYPES:
- AS - Auger/Grab Sample
- CS - California Sampler
- BX - 1.5" Rock Core
- NX - 2.1" Rock Core
- GP - Geoprobe
- HP - Hydro Punch
- SS - Split Spoon
- ST - Shelby Tube
- WS - Wash Sample

OTHER:
- AGS - Above Ground Surface

REMARKS

Sediment sample taken from 2 feet to 4 feet below riverbed. Only 2-4 feet sample taken for VOC's due to low recovery.

Reviewed by: **Date:**

BL LOGS BUBBLY CREEK.GPJ CDM_CORP.GDT 7/12/04

Location Bubbly Creek - SFSB Chicago River Date 4/20/04

Project / Client USACE 6152-006

0730 Arrived at Site - South Fork South Branch of Chicago River
Dave DeCourcy Boyer
CDM Kirsten Dickson
Dave Bjostad

Aqua Survey Mike Beaston
Mark Padover
LeRoy Brown
(they put boats in water yesterday after driving from East Coast)

USACE Nicole Roach

- Unloaded equipment from van and onto sampling vessels
Cloudy, ~ 55°F

0800 Safety Briefing
all attended and signed H+S Plan
river + water biggest hazard
Sampling vessel no rails; wear life vests
Main vessel has marine radio for emergencies
H+S: steel toed boots, Tyveks, nitrile or latex gloves, hard hat, safety glasses

0830 Boats launched from Crowley Marina on Corbett St.

NB 4-20-04

Location Bubbly Creek - SFSB Chicago River Date 4/20/04

Project / Client USACE 6152-006

0840 Midwest Evan Flo 401-732-3400
he called
Total Chromium - yes
Wet Chem
CN
P
another
sediment method - yes
(water method listed)
in SOW

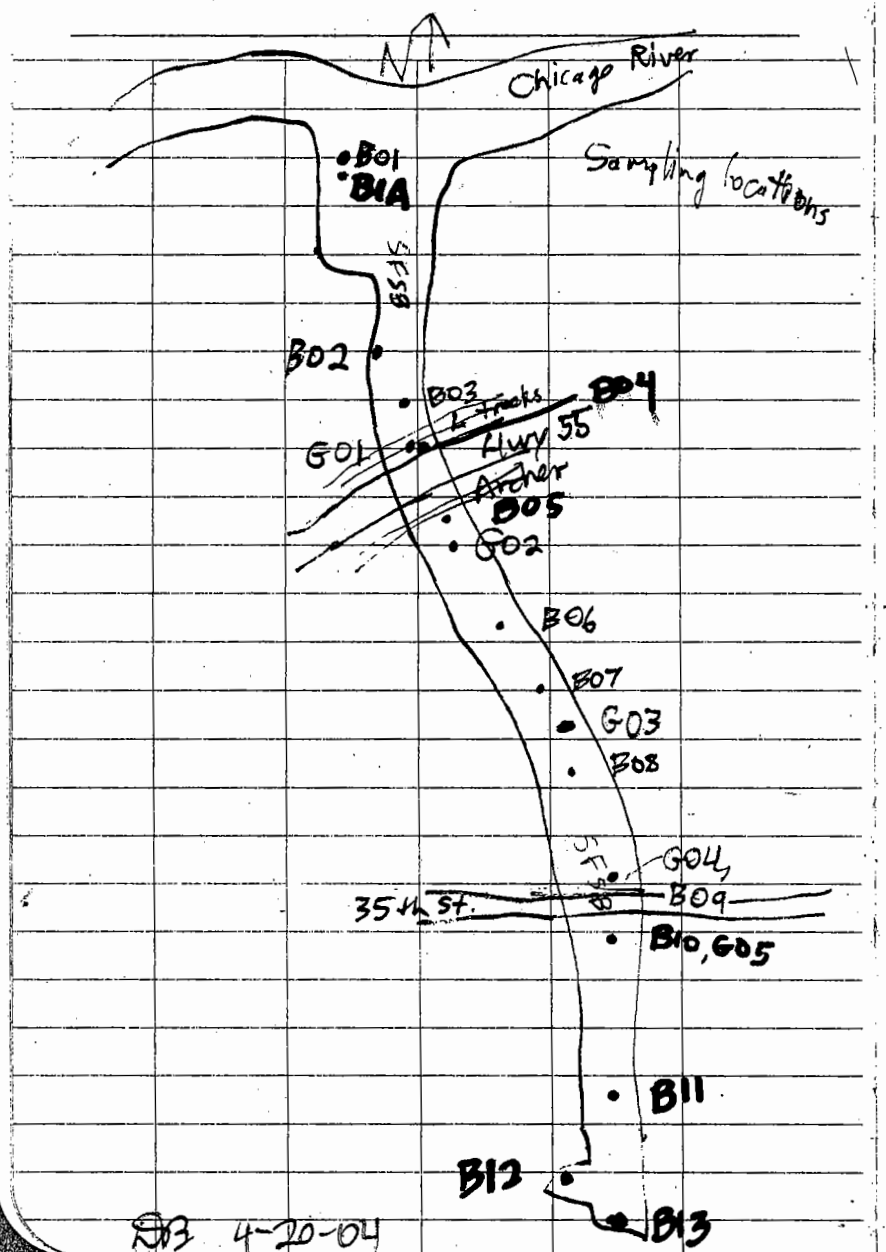
0850 Set up at sampling location SF-2004-B02 (B01 backup)
0855 Start sampling Northernmost location
water depth 5.4'
sediment thickness 11.2'

0910 Sample handling 0910
PID mostly 0, 1.7 ppm peak over freshly opened portion.
Ambient air 0
Black muck through entire length of core. Odor
PID readings from ziplock bag 15-50 ppm, except 237, 250 ppm at (0-1', 12-14')
VOC subsample - USACE agreed
0935 Decontamination, excess returned to river
SF-2004-B01 5 - 8oz. jars homogenized (0-14')
Photos 1 & 2 2 - 4oz. jars - 10-12' - VOCs
amber, teflon-lined lid
pre-cleaned from lab
0945 Move vessels to next sampling location 10-14' - CLP VOCs

NB 4-20-04

Location SFSB Chicago River Date 4-20-04

Project / Client USACE 6152-006



DB 4-20-04

Location SFSB Chicago River Date 4-20-04

Project / Client USACE 6152-006

0955 SF-2004-B02 Photo 3 of crew + vibracorer
4.2' water depth
16.0' sediment thickness
black again, this time with some hairs visible and small clumps - one bone seen
PID ambient mostly 0, 4.4 ppm max
PID on samples: 4-6' 69 - VOCs subsample
6-8' ~66-67 USACE agreed
rest lower
homogenized entire thickness for sample (except VOCs)
Again, 5 - 9oz jars
2 - 4oz jars 4-6'
6-8'
Creek: slight oil sheen. Bubbling. Some trash nearby.
Photos 3-4 of sediment, mostly of sampling process, vibracore vessel, setup.
1035 To next location - north of bridge
1045 vibracoring SF-2004-B03
12.6' water, 11.1' sediment thickness
9.6' length of core
1115 collected samples - black muck throughout again
USACE noticed CDM was homogenizing entire core length, not 2' interval with highest PID reading. She spoke w/ Jay Simmler in her office & he agreed, per scope, homogenize "worst case" 2-foot interval with highest PID reading.

DB 4-20-04

Location SFSB Chicago River Date 4-20-04

Project / Client USACE 6152-006

1115 cont. Discussed w/Nicole pros + cons, both valid. just not consistent. Depends on data use (MW characterize for dredging - all good; worst case - 2' PID interval)

Switched - disposed of entire core samples here, re-collected by homogenizing 2' interval 4-6' only first 2 locations (B01, B02) entire length homogenized. USACE does not require resampling for those.

SF-2004-B03 4-6' deep - PID #26

Again, 5 - 9oz. jars, 2 - 4oz. jars

1140 head back to shore

1150 break for lunch

CDM offsite

1235 Back onsite

1250 Back onto boat

Toward B07, but rain (light). Also, vibracorer vessel stopped because of possible engine problems, but OK

Mark Padover called offsite, checked weather on website - rain coming, including heavy (red on radar)

All agreed to try a grab sample (quicker than boring/core)

1320 Setup at G02 south of bridge

Ponar grab sample. Black again. Hair. Soupy. right near storm drain outfall ~4' diameter

KB 4-20-04

Location SFSB Chicago River Date 4-20-04

Project / Client USACE 6152-006

1350 Collected grab sample (ponar)

SF-2004-G01

just south of bridge with L tracks (N of Hwy 55 bridge)

Black, similar looking + smelling sample w/hair.

As for G02, collected:

4 - 9 oz. jars

1 - 4 oz. jar

1400 Raining a bit harder, plus heavy rain suspected soon, so finishing for the day.

Drove vessels back to Marina - Crowleys. (approx. 5 minute ride)

Total for today: 5 of 18 samples

3 cores ~1 hr apiece

2 grabs ~20 min. apiece

1410 - Aqua Survey & USACE offsite

1410-1525 Packed samples - (cooler, bubble wrap, vermiculite, strapping tape, Custody seal signed. Ice in bags in cooler.

23 - 9oz jars, 8 - 4oz. jars. No trip blanks per scope

1545 Fed Ex dropoff, back to office.

(tornadoes in area 8 pm)

Dave Bjostad 4-20-04

Location South Fork South Branch Chicago River Date 4-21-04

Project / Client USACE - Chicago District 6152-006

0725 CDM onsite. Bjostad, Dickson, DeCourcy-Bower
Aqua Survey onsite. - Mark, Mike, LeRoy
Loaded vessels with equipment + supplies.
Overcast, ~ 55°F. Not raining but slight possibility, should clear after mid morning per news. Called ComEd - left message

0750 USACE Nicole Roach onsite. H&S briefing - 5 min.

0800 Launch, drive vessels to B06 location
ComEd has not called back yet, Dove Coleman. ComEd had said OK onsite last week, would review maps in more detail in office, left Kirsten voice mail 4-20-04 which we got 4 pm. Dove Coleman not in office then. Will skip B04 and B05 in case ComEd has lines near bridge, which they mentioned in voice mail.

0815 Arrived at B06. As like yesterday, Aqua Survey used GPS to locate sampling point to spot desired by Corps per scope.
SF-2004-B06
11'4" to sediment, only 2' penetration virtually no sediment obtained, no core

0830 Moved 25-30' away, lowered vibracorer - almost no penetration again. DB 4-21-04

Location SFSB Chicago River Date 4-21-04

Project / Client USACE 6152-006

0843 USACE Nicole Roach reviewed maps of planned sampling locations vs. hydrographic survey sediment depths. Expect thicker sediment thickness on west side of creek, so moved there. DB 4-21-04

0845 Depth to sediment 8'2"
12-15 feet from bank - no penetration again.

0850 Aqua Survey manually pushed core several times, found a softer spot. Took GPS coordinates, will now vibra core,
6.5' core, 3 subsamples for VOCs - got 4th - rocks
PID - 0 ppm ambient and above core. Oily sheen, liquidy sediment, more gravelly than yesterday. Photo 2486 - Vibracore

0915 Collected sample SF-2004-B06
6-8 feet depth (PID highest 29 ppm) Photo 2487, 2488
5 - 9 oz jars 2 - 4 oz. jars

0922 N. of barge with sand.
Move on to B07 upstream
13.8' sediment core
Black, similar to all yesterday

0940 SF-2004-B07 collected Photo 2489
MS/MSD triplicate volume sample 6-8' depth DB 4-21-04
15 - 9 oz. jars + 2 - 4 oz jars - Bjostad called (as I verified that 4 oz.'s plenty for VOCs MS/MSD. DB 4-21-04

Location SFSB Chicago River Date 4-21-04

Project / Client USACE 6152-006

1000 Decontamination

1010 Move to B08

1020 Start coring

1030 SF-2004-B08

6.6' penetration, 4' core length

assume compression - discussion between D. DeCoursey-Bower and Nicole Roach, also Bjostad and Padover. Padover: typical compression leads to 50-80% of penetration, this site has been similar. OK as long as we're consistent says Roach. We don't believe slough (eg. can't falling through catcher or top fluffy suspension not recovered.

Black sample, but top two feet more sandy.

At 5.5' sandy again/in between matrix similar to yesterday.

PID 63 at 4-6' depth, so sample here, homogenize this 2-foot interval, as before (except first 2 yesterday).

Photo 2490

1045 Decon, then move to B09 - no, G04 first (same location)

3 tries with ponar grab sampler - no recovery except one shirt sleeve.

DB 4-21-04

Location SFSB Chicago River Date 4-21-04

Project / Client USACE 6152-006

1100 Moved several feet (~13') to new location to try again.

SF-2004-G04

black, soupy, odor, but not oil sheen

Photos 2491, 2492

4 - 9oz. jars, 1 - 4oz jar for VOCs

1110 B09

SF-2004-B09 Photo 2493

Black sediment with odor. One sandier layer (see separate boring log)

VOCs - 6-8' PID 50-60

5 - 9oz. jars, 2 - 4oz jars 6-8' homog. as before

1130 Move on to G03 Photo 2494

grab sample

1140 SF-2004-G03

4 - 9oz. jars, 1 - 4oz. jar

1150 Move to B05 - vibracorer.

Break for lunch - drive to marina.

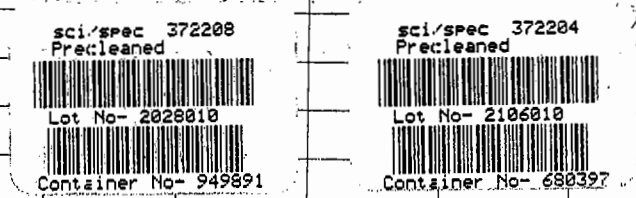
7 of 13 B done, 3 of 5 G done

1205 at Marina DB 4-21-04 DB 4-21-04

Location SFSB Chicago R. Date 4-21-04

Project / Client USACE 6152-006

1210-1250 Dickson & DeCourcy Bower to office to pick up sample jars + coolers from lab. Two example Certification of pre-cleaned containers.



1315 Launch again

1345 SF-2004-B05 Photo 2497
SF-2004-D05 duplicate
5-9oz. jars, 2-4oz jars
same for dup. - for 9oz. jars, from same
46' interval highest PID 136ppm

1415 to new location

1425 SF-2004-B04
between Hwy 55 bridge and L tracks bridge. Photo 2498

Called Mitkem lab - Evan. Instructed him to hold sample B01. OK. Bjostad follow up with email 4-21-04 DB

Location SFSB Chicago River Date 4-21-04

Project / Client USACE 6152-006

24 hr holding time listed in SAP for Cr^{+6}, flash point, pH, reactive CN and sulfide is for aqueous. Solids longer. They had not started testing.

Bjostad had discussed with USACE's Roach, she will feel more comfortable because deep PID reading at that location highest yet.

1435 PID reading at B04: Photo 2499

44	0-2
239	2-4
414	4-6 ←
219	6-8
302	8-10

1500 Set up at B01 → Call it B1A 29.5 feet from each other
Redo this sample B1A, hold as described above & yesterday. B01.

DB 4-21-04

Location Chicago SFSB Date 4-21-04
Project / Client USACE 6152-006

1510 SF-2004-B1A Photos 2502 2503
deepest 10-12' 529 ppm PID
Sampled this 2' interval
5 - 9oz jars, 2-4oz jars
1545 On shore - sub and USACE offsite
Sample packing, CoCs
Two coolers sent to Mitkem
1630 CDM offsite
Dropped off at FedEx in downtown Chicago
1700 to office

Dave Bjostad 4-21-04

Location Chicago SFSB Date 4-22-04
Project / Client USACE 6152-006

0725 CDM onsite - same 3: Bjostad, Dickson, DeCourcy Bower.
USACE - Roach onsite
Aqua Survey - Padover, Beaston, Brown again.
0745 H+S briefing ✓ No problems noted past 2 days.
0750 Launch for southernmost location B13
Weather: partly cloudy, ~48°F
0820 Setup - next to pump station
0830 GPS coordinates close, exact under walkway, OK in canal per USACE. Photos of location & vibracorer.
SF-2004-B13
5.5' penetration, only 3' core length.
0-5.5' sample ps049 Black, but different sediment type than previously. See USCS log - more gravel, sand, debris
Photos 2515, 2516
0900 Move on to next location

RB 4-22-04

Location Chicago SFSB Date 4-22-04
Project / Client USACE 6152-006

0905 Setup at B12 near end of creek, turning basin photos 2518, 2521

0915 SF-2004-B12 14-16'
15.8' penetration, 9' recovery
PID highest deepest 237 ppm
Again black sediment, some hair + debris

0930 5-9oz. jars + 2-4oz. jars

Note for B13: ran short on 9 oz. jars due to B1A re-do, so used 11-4oz. jars + 1-4oz. jar VOCs
2nd not collected due to lack of material

0945 SF-2004-B11
shallow, can't push in manually so Aqua Survey cut 3' off top of core barrel to allow vibracore to be mounted.

0955 11' penetration, 7' recovery
Photo 2523 shallowest highest PID 0-2'

1020 Move on to B10

DB 4-22-04

Location Chicago SFSB Date 4-22-04
Project / Client USACE 6152-006

1030 At location B10 + G05 just south of 35th St. bridge
G05: SF-2004-G05
first try ponar just water, ok 2nd
Photo 2524
4-9oz. jars, 1-4oz. jar

1045 SF-2004-B10
Photos 2525-27
12.5' penetration, 8.9' recovery
10-12' highest PID (23 ppm) so sample here.
5-9oz jars, 2-4oz. jars

1140 Back at marina All work completed Aqua Survey and USACE offsite, Aqua Survey back after lunch to load supplies into vehicles and remove boats from the water
CDM sample packing and CoC form.
Lunch
One cooler, to FedEx by 1730 ops.
Returned equipment to office.

Dave Bystol 4-22-04

Appendix D Table of Contents

Appendix D

Chain of Custody Forms

MITKEM CORPORATION
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

SUBMITTED TO			REPORT TO		
COMPANY: CDM	PHONE: 312-346-5000		COMPANY	PHONE	LAB PROJECT #: C0344
NAME: Dave Bjostad	FAX: 312-346-5228		NAME	FAX	
ADDRESS: 125. S. Wacker Dr Suite 600			ADDRESS		TURNAROUND TIME: STD
CITY/ST/ZIP: Chicago IL 60606			CITY/ST/ZIP		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
Bubbly Creek-South Fork South Branch Chicago River	6152-006	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB sediment	WATER	SOIL	OTHER sediment	LAB ID	# OF CONTAINERS	Metals (11)	Hexavalent Chromium	SVOCs (8270) except PNAs	PNAs (8270 SIM)	PCBs (8082)	VOCs (8260B)	CN, P, Phenol, NH3-N, COD	TOC	% Volatile Solids, % total solids	Particle Size, Specific Gravity	TCLP RCRA Metals, VOCs, SVOCs	TCLP Herbicides & Pesticides	Flashpoint, soil pH, Reactive Cyanide, Reactive Sulfide, Paint Filter	COMMENTS
SF-2004-B01	4/20/04					X	-01	7	X	X	X	X	X	X	X	X	X	X	X	X	X	
SF-2004-B02	4/20/04					X	-02	7	X	X	X	X	X	X	X	X	X	X	X	X	X	
SF-2004-B03	4/20/04					X	-03	7	X	X	X	X	X	X	X	X	X	X	X	X	X	
SF-2004-G01	4/20/04		X				-04	5	X	X	X	X	X	X	X	X	X	X				
SF-2004-G02	4/20/04		X				-05	5	X	X	X	X	X	X	X	X	X	X				
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Kirsten Dickson	4/20/04 1512	Via Fed Ex 8427 4419 2180	/	Please ensure all analyses requested matches the Scope of Work	5°C
				4/21/04 08:45		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
[illegible] Center [illegible]vard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO			INVOICE TO		
COMPANY: CDM	PHONE: 312-346-5000		COMPANY:	PHONE:	LAB PROJECT #: C0344
NAME: Dave Bjostad	FAX: 312-346-5228		NAME:	FAX:	
ADDRESS: 125 S. Wacker Dr Suite 600			ADDRESS:		TURNAROUND TIME: STD
CITY/ST/ZIP: Chicago, IL 60606			CITY/ST/ZIP:		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
Bubbly Creek-South Fork South Branch Chicago River	6152-006	

	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	Metals (11)	Hexavalent Chromium	SVOCs (8270) except PNAs	PNAs (8270 SIM)	PCBs (8082)	VOCs (8260 B)	CN, P, oil&G (1664, NH4-N, COD)	TOC	% Volatile Solids	% Total Solids + Particle Size + Specific Gravity	TCLP RCRA Metals, VOCs, SVOCs	TCLP Herbicides & Pesticides	Flashpoint, Reactive Cyanide, soil & waste pH	Reactive Sulfide	Paint Filter	COMMENTS
6	SF-2004-B05	4/21/04					X		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	SF-2004-D05	4/21/04					X		7	X	X	X	X	X	X	X	X	X	X	X	X	X	PH ONLY			
8	SF-2004-B01a	4/21/04					X		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	SF-2004-B09	4/21/04					X		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	SF-2004-B04	4/21/04					X		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	SF-2004-B03	4/21/04		X					5	X	X	X	X	X	X	X	X	X	X	X						
		/																							
		/																							
		/																							
		/																							
		/																							
		/																							

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Kirsten Dickson	4/21/04 1630	Via Fed Ex 8427 4419 2169	/	Please ensure all analyses requested matches the Scope of Work	2°
		/	J. Davis	4/22/04 0900		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
5 Me[illegible]nter [illegible]vard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO			INVOICE TO		
COMPANY CDM	PHONE 312-346-5000		COMPANY	PHONE	LAB PROJECT #: CO344
NAME Dave Bjostad	FAX 312-346-5228		NAME	FAX	
ADDRESS 125. S. Wacker Dr Suite 600			ADDRESS		TURNAROUND TIME: STD
CITY/ST/ZIP Chicago, IL 60606			CITY/ST/ZIP		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
Bubbly Creek - South Fork South Branch - Chicago River	6152-006	

	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	Metals (11)	Hexavalent Chromium	SVOCs (8270) except PNAs	PNAs (8270 SIM)	PCBs (8082)	VOCs (8260B)	C.N.P. OSG, 1664, NH4-N, COD	TOC	% Volatile Solids	Particle Size + Solids	Specific Gravity	TCLP REEA Metals, VOCs, SVOCs	TCLP Pesticides & Herbicides	Flashpoint, soil & waste	pH	Reactive Cyanide	Reactive Sulfide	Paint Filter	COMMENTS
2	SF-2004-B08	4/21/04					X		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	SF-2004-B06	4/21/04					X		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	SF-2004-G04	4/21/04		X					5	X	X	X	X	X	X	X	X	X	X	X							
5	SF-2004-B07	4/21/04					X		17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Use for MS/MSD
		/																									
		/																									
		/																									
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		/																									
		/																									
		/																									

TSP#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Kat A. Dickson	4/21/04 1643	via Fed Ex 8427 4419 2170	/	Please ensure all analyses requested matches the Scope of Work. Use SF-2004-B07 for MS/MSD	3°
		/	J. Davis	4/22/04 0900		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
...5 Me...nter ...vard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO				TAX QUOTE TO			
COMPANY CDM	PHONE 312-346-5000			COMPANY	PHONE	LAB PROJECT #:	
NAME Dave Bjostad	FAX 312-346-5228			NAME	FAX	C0344	
ADDRESS 125 S. Wacker Dr., Suite 600				ADDRESS		TURNAROUND TIME:	
CITY/ST/ZIP Chicago, IL 60606				CITY/ST/ZIP		STD	

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
Bubbly Creek - South Fork South Branch (SFSB) Chicago River	6152-006	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB Sediment	WATER	SOIL	OTHER Sediment	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: Metals (11)	Hexavalent chromium	SVOCs (8270) except PNAs	PNAs (8270 SIM)	PCBs (8082)	VOCs (8260B)	CN, P, oFG, NH_4N, COD	TOC	% volatile solids / % total solids	particle size / specific gravity	TCLP: RCRA metals, VOCs, SVOCs	TCLP: Pesticides & Herbicides	Flashpoint, pH	Reactive cyanide	Reactive sulfide	Paint Filter	COMMENTS
SF-2004-B13	4/22/04 0830					X	16	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SF-2004-B12	4/22/04 0915					X	17	7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SF-2004-B11	4/22/04 0955					X	18	7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SF-2004-G05	4/22/04 1030		X				19	5	X	X	X	X	X	X	X	X	X	X							
SF-2004-B10	4/22/04 1045					X	20	7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	/																								
	/																								
	/																								
	/																								
	/																								
	/																								
	/																								

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	David M. Bjostad	4-22-04 1155	Via Fed Ex. No. 8427-4419-2206	4 /	Make sure all requested analyses match the scope of work. Use container marked for VOCs for TCLP VOCs too, if sufficient volume.	30
		/	J. Davis	4-23-04 0900		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION

Sample Condition Form

Received By: FP	Reviewed By: JD	Date: 4/2/04	MITKEM Project: C03H

Client Project: Client: CDM

Condition:

1) Custody Seal(s) Present / (Absent)
Coolers / Bottles
Intact / Broken

Custody Seal Numbers
NA

3) Chain -of- Custody (Present) / Absent

4) Airbill(s) (Present) / Absent

Airbill Number(s) 946744R 2180

5) Cooler Temperature 5°C

Coolant Condition OK

6) Sample Bottles (Intact) / Broken / Leaking

7) Date Received 4/2/04

8) Time Received 845

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaO	VOA Matrix
1					US
2					↓
3					
4					
5					↓
qualifier B					

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

See Sample Condition Notification / Corrective Action Form yes / no

Comments / Remarks

Rad Ok Yes / No

MITKEM CORPORATION

Sample Condition Form

Received By: JOA///	Reviewed By: EP	Date: 4/22-04	MITKEM Project: 60344

Client Project: Client: CDM

Condition:

1) Custody Seal(s) (Present) / Absent
(Coolers) / Bottles
(Intact) / Broken

Custody Seal Numbers: N/A

3) Chain -of- Custody (Present) / Absent

4) Airbill(s) (Present) / Absent

Airbill Number(s): 8427-4419 2169
8427-4419-2170

5) Cooler Temperature: 2°

Coolant Condition: Ice

6) Sample Bottles (Intact)/Broken/Leaking

7) Date Received: 4-22-04

8) Time Received: 0900

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaO	VOA Matrix
60344-06					
-07					
-08					
-09					
-10					
-11					
-12					
-13					
-14					
60344-15					

VOA Matrix Key:
US = Unpreserved Soil — A = Air
UA = Unpreserved Aqueous — H = HCl
M/N = MeOH& NaHSO4 — E=Encore
N = NaHSO4 M = MeOH

See Sample Condition Notification / Corrective Action Form yes (no)

Comments / Remarks

Rad Ok (Yes) / No

MITKEM CORPORATION

Sample Condition Form

Received By: SHAUN Reviewed By: [illegible] Date: 4-23-04 MITKEM Project: CO344

Client Project: Client: CDM

Condition:

1) Custody Seal(s) (Present) / Absent
(Coolers) / Bottles
(Intact) / Broken

Custody Seal Numbers N/A

3) Chain -of- Custody (Present) / Absent

4) Airbill(s) (Present) / Absent

Airbill Number(s) 8427
4419
2206

5) Cooler Temperature 3°

Coolant Condition Ice

6) Sample Bottles (Intact)/Broken/Leaking

7) Date Received 4-23-04

8) Time Received 0900

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaO	VOA Matrix
CO344-16					
-17					
-18					
-19					
CO344-20					

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

See Sample Condition Notification / Corrective Action Form yes (no)

Comments / Remarks

Rad Ok (Yes) / No

Appendix D

Data Summary Table

Appendix D

Data Summary Table Contents

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A / SF-2004-B01A / Sediment / 4/21/2004		SF-2004-B01ADL / SF-2004-B01A / Sediment / 4/21/2004		SF-2004-B02 / SF-2004-B02 / Sediment / 4/20/2004		SF-2004-B02DL / SF-2004-B02 / Sediment / 4/20/2004		SF-2004-B03 / SF-2004-B03 / Sediment / 4/20/2004	
(Group Code)	**(Group Description)**												
VOAs													
75-71-8	Dichlorodifluoromethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
74-87-3	Chloromethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
75-01-4	Vinyl Chloride	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	19	
74-83-9	Bromomethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
75-00-3	Chloroethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
75-69-4	Trichlorofluoromethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
75-35-4	1,1-Dichloroethene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
67-64-1	Acetone	SW8260B-S	UG/KG	620	E	540	D	480		810	D	680	E
74-88-4	Iodomethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
75-15-0	Carbon Disulfide	SW8260B-S	UG/KG	6	J	13	DJ	9	J	17	DJ	11	J
75-09-2	Methylene Chloride	SW8260B-S	UG/KG	2	J	28	DJB	11	J	33	U	3	J
156-60-5	trans-1,2-Dichloroethene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
1634-04-4	Methyl tert-Butyl Ether	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
75-34-3	1,1-Dichloroethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
108-05-4	Vinyl Acetate	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
78-93-3	2-Butanone	SW8260B-S	UG/KG	250		240	D	220		440	D	280	
156-59-2	cis-1,2-Dichloroethene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	6	J
594-20-7	2,2-Dichloropropane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
74-97-5	Chlorobromomethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
67-66-3	Chloroform	SW8260B-S	UG/KG	10	U	12	DJ	13	U	33	U	12	U
71-55-6	1,1,1-Trichloroethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
26952-23-8	1,1-Dichloropropene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
56-23-5	Carbon Tetrachloride	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
107-06-2	1,2-Dichloroethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
71-43-2	Benzene	SW8260B-S	UG/KG	15		54	U	31		18	DJ	18	
79-01-6	Trichloroethene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
78-87-5	1,2-Dichloropropane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
74-95-3	Dibromomethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
75-27-4	Bromodichloromethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
10061-01-5	cis-1,3-Dichloropropene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
108-10-1	4-Methyl-2-pentanone	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
108-88-3	Toluene	SW8260B-S	UG/KG	7	J	54	U	51		44	D	160	
10061-02-6	trans-1,3-Dichloropropene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
79-00-5	1,1,2-Trichloroethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
142-28-9	1,3-Dichloropropane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
127-18-4	Tetrachloroethene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
591-78-6	2-Hexanone	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A / SF-2004-B01A / Sediment / 4/21/2004		SF-2004-B01ADL / SF-2004-B01A / Sediment / 4/21/2004		SF-2004-B02 / SF-2004-B02 / Sediment / 4/20/2004		SF-2004-B02DL / SF-2004-B02 / Sediment / 4/20/2004		SF-2004-B03 / SF-2004-B03 / Sediment / 4/20/2004	
124-48-1	Dibromochloromethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
106-93-4	1,2-Dibromoethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
108-90-7	Chlorobenzene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
630-20-6	1,1,1,2-Tetrachlorroethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
100-41-4	Ethylbenzene	SW8260B-S	UG/KG	6	J	54	U	13	U	11	DJ	85	
106-42-3	p-Xylene	SW8260B-S	UG/KG	21		21	DJ	620		470	D	600	
95-47-6	o-Xylene	SW8260B-S	UG/KG	32		27	DJ	630	E	440	D	500	E
1330-20-7	Xylenes (total)	SW8260B-S	UG/KG	53		48	DJ	1200		910	D	1100	
100-42-5	Styrene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
75-25-2	Bromoform	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
98-82-8	Isopropylbenzene	SW8260B-S	UG/KG	11		54	U	63		42	D	58	
79-34-5	1,1,2,2-Tetrachloroethane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
108-86-1	Bromobenzene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
96-18-4	1,2,3-Trichloropropane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
103-65-1	n-Propylbenzene	SW8260B-S	UG/KG	10	U	54	U	100		93	D	130	
95-49-8	2-Chlorotoluene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
108-67-8	1,3,5-Trimethyl Benzene	SW8260B-S	UG/KG	51		28	DJ	460		390	D	430	
106-43-4	4-Chlorotoluene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
96-06-6	tert-butylbenzene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
95-63-6	1,2,4-Trimethylbenzene	SW8260B-S	UG/KG	110		80	D	1100	E	1000	D	990	E
135-96-8	sec-butylbenzene	SW8260B-S	UG/KG	10	U	54	U	130		110	D	180	
99-87-6	Cymene	SW8260B-S	UG/KG	75		54	U	320		280	D	550	E
541-73-1	1,3-Dichlorobenzene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
106-46-7	1,4-Dichlorobenzene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
104-51-8	n-Butylbenzene	SW8260B-S	UG/KG	57		24	DJ	320		270	D	470	E
95-50-1	1,2-Dichlorobenzene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
96-12-8	1,2-Dibromo-3-chloropropane	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
120-82-1	1,2,4-Trichlorobenzene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
87-68-3	Hexachlorobutadiene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U
91-20-3	Naphthalene	SW8260B-S	UG/KG	95		30	DJ	150		410	D	180	
87-61-6	1,2,3-Trichlorobenzene	SW8260B-S	UG/KG	10	U	54	U	13	U	33	U	12	U

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
B - Detected in associated blank sample
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B03DL / SF-2004-B03 / Sediment / 4/20/2004		SF-2004-B04 / SF-2004-B04 / Sediment / 4/21/2004		SF-2004-B05 / SF-2004-B05 / Sediment / 4/21/2004		SF-2004-B05DL / SF-2004-B05 / Sediment / 4/21/2004		SF-2004-D05 / SF-2004-D05 / Sed. (Duplicate) / 4/21/2004	
(Group Code)	**(Group Description)**												
VOAs													
75-71-8	Dichlorodifluoromethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
74-87-3	Chloromethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
75-01-4	Vinyl Chloride	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
74-83-9	Bromomethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
75-00-3	Chloroethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
75-69-4	Trichlorofluoromethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
75-35-4	1,1-Dichloroethene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
67-64-1	Acetone	SW8260B-S	UG/KG	1300	DE	77		1000	E	600	D	3700	E
74-88-4	Iodomethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
75-15-0	Carbon Disulfide	SW8260B-S	UG/KG	18	DJ	10	U	15		14	DJ	37	
75-09-2	Methylene Chloride	SW8260B-S	UG/KG	10	DJ	3	JB	10	U	19	U	8	J
156-60-5	trans-1,2-Dichloroethene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
1634-04-4	Methyl tert-Butyl Ether	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
75-34-3	1,1-Dichloroethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
108-05-4	Vinyl Acetate	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
78-93-3	2-Butanone	SW8260B-S	UG/KG	680	D	26		360		240	D	1500	E
156-59-2	cis-1,2-Dichloroethene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
594-20-7	2,2-Dichloropropane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
74-97-5	Chlorobromomethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
67-66-3	Chloroform	SW8260B-S	UG/KG	28	U	2	J	10	U	19	U	15	U
71-55-6	1,1,1-Trichloroethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
26952-23-8	1,1-Dichloropropene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
56-23-5	Carbon Tetrachloride	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
107-06-2	1,2-Dichloroethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
71-43-2	Benzene	SW8260B-S	UG/KG	15	DJ	10	U	4	J	19	U	22	
79-01-6	Trichloroethene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
78-87-5	1,2-Dichloropropane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
74-95-3	Dibromomethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
75-27-4	Bromodichloromethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
10061-01-5	cis-1,3-Dichloropropene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
108-10-1	4-Methyl-2-pentanone	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
108-88-3	Toluene	SW8260B-S	UG/KG	140	D	2	J	19		16	DJ	50	
10061-02-6	trans-1,3-Dichloropropene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
79-00-5	1,1,2-Trichloroethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
142-28-9	1,3-Dichloropropane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
127-18-4	Tetrachloroethene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
591-78-6	2-Hexanone	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B03DL / SF-2004-B03 / Sediment / 4/20/2004		SF-2004-B04 / SF-2004-B04 / Sediment / 4/21/2004		SF-2004-B05 / SF-2004-B05 / Sediment / 4/21/2004		SF-2004-B05DL / SF-2004-B05 / Sediment / 4/21/2004		SF-2004-D05 / SF-2004-D05 / Sed. (Duplicate) / 4/21/2004	
124-48-1	Dibromochloromethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
106-93-4	1,2-Dibromoethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
108-90-7	Chlorobenzene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
630-20-6	1,1,1,2-Tetrachlorroethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
100-41-4	Ethylbenzene	SW8260B-S	UG/KG	58	D	10	U	25		22	D	46	
106-42-3	p-Xylene	SW8260B-S	UG/KG	400	D	9	J	120		110	D	120	
95-47-6	o-Xylene	SW8260B-S	UG/KG	330	D	8	J	79		71	D	88	
1330-20-7	Xylenes (total)	SW8260B-S	UG/KG	730	D	18		200		180	D	200	
100-42-5	Styrene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
75-25-2	Bromoform	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
98-82-8	Isopropylbenzene	SW8260B-S	UG/KG	35	D	2	J	16		14	DJ	56	
79-34-5	1,1,2,2-Tetrachloroethane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
108-86-1	Bromobenzene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
96-18-4	1,2,3-Trichloropropane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
103-65-1	n-Propylbenzene	SW8260B-S	UG/KG	86	D	3	J	45		40	D	110	
95-49-8	2-Chlorotoluene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
108-67-8	1,3,5-Trimethyl Benzene	SW8260B-S	UG/KG	310	D	12		150		140	D	340	
106-43-4	4-Chlorotoluene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
96-06-6	tert-butylbenzene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
95-63-6	1,2,4-Trimethylbenzene	SW8260B-S	UG/KG	740	D	28		400	E	360	D	880	E
135-96-8	sec-butylbenzene	SW8260B-S	UG/KG	120	D	4	J	79		67	D	230	
99-87-6	Cymene	SW8260B-S	UG/KG	370	D	7	J	340		260	D	790	E
541-73-1	1,3-Dichlorobenzene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
106-46-7	1,4-Dichlorobenzene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
104-51-8	n-Butylbenzene	SW8260B-S	UG/KG	330	D	12		260		190	D	500	
95-50-1	1,2-Dichlorobenzene	SW8260B-S	UG/KG	28	U	10	U	11		11	DJ	11	J
96-12-8	1,2-Dibromo-3-chloropropane	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
120-82-1	1,2,4-Trichlorobenzene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
87-68-3	Hexachlorobutadiene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U
91-20-3	Naphthalene	SW8260B-S	UG/KG	220	D	25		140		140	D	230	
87-61-6	1,2,3-Trichlorobenzene	SW8260B-S	UG/KG	28	U	10	U	10	U	19	U	15	U

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
B - Detected in associated blank sample
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code Location Sample Matrix Unit Date:	SF-2004-D05DL SF-2004-D05 Sed. (Duplicate) 4/21/2004		SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004		SF-2004-B07DL SF-2004-B07 Sediment 4/21/2004		SF-2004-B08 SF-2004-B08 Sediment 4/21/2004	
(Group Code)	**(Group Description)**												
VOAs													
75-71-8	Dichlorodifluoromethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
74-87-3	Chloromethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
75-01-4	Vinyl Chloride	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
74-83-9	Bromomethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
75-00-3	Chloroethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
75-69-4	Trichlorofluoromethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
75-35-4	1,1-Dichloroethene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
67-64-1	Acetone	SW8260B-S	UG/KG	2100	D	42		350		660	D	1400	E
74-88-4	Iodomethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
75-15-0	Carbon Disulfide	SW8260B-S	UG/KG	29	DJ	6	U	10		11	DJ	14	
75-09-2	Methylene Chloride	SW8260B-S	UG/KG	36	DJB	2	JB	7	J	24	DJB	4	J
156-60-5	trans-1,2-Dichloroethene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
1634-04-4	Methyl tert-Butyl Ether	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
75-34-3	1,1-Dichloroethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
108-05-4	Vinyl Acetate	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
78-93-3	2-Butanone	SW8260B-S	UG/KG	790	D	15		160		320	D	660	E
156-59-2	cis-1,2-Dichloroethene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
594-20-7	2,2-Dichloropropane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
74-97-5	Chlorobromomethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
67-66-3	Chloroform	SW8260B-S	UG/KG	18	DJ	1	J	10	U	52	U	10	U
71-55-6	1,1,1-Trichloroethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
26952-23-8	1,1-Dichloropropene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
56-23-5	Carbon Tetrachloride	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
107-06-2	1,2-Dichloroethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
71-43-2	Benzene	SW8260B-S	UG/KG	84	U	6	U	12		52	U	11	
79-01-6	Trichloroethene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
78-87-5	1,2-Dichloropropane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
74-95-3	Dibromomethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
75-27-4	Bromodichloromethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
10061-01-5	cis-1,3-Dichloropropene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
108-10-1	4-Methyl-2-pentanone	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
108-88-3	Toluene	SW8260B-S	UG/KG	28	DJ	6	U	11		52	U	6	J
10061-02-6	trans-1,3-Dichloropropene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
79-00-5	1,1,2-Trichloroethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
142-28-9	1,3-Dichloropropane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
127-18-4	Tetrachloroethene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
591-78-6	2-Hexanone	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-D05DL / SF-2004-D05 / Sed. (Duplicate) / 4/21/2004		SF-2004-B06 / SF-2004-B06 / Sediment / 4/21/2004		SF-2004-B07 / SF-2004-B07 / Sediment / 4/21/2004		SF-2004-B07DL / SF-2004-B07 / Sediment / 4/21/2004		SF-2004-B08 / SF-2004-B08 / Sediment / 4/21/2004	
124-48-1	Dibromochloromethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
106-93-4	1,2-Dibromoethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
108-90-7	Chlorobenzene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	8	J
630-20-6	1,1,1,2-Tetrachlorroethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
100-41-4	Ethylbenzene	SW8260B-S	UG/KG	84	U	6	U	14		52	U	10	U
106-42-3	p-Xylene	SW8260B-S	UG/KG	42	DJ	6	U	180		33	DJ	70	
95-47-6	o-Xylene	SW8260B-S	UG/KG	32	DJ	6	U	130		25	DJ	150	
1330-20-7	Xylenes (total)	SW8260B-S	UG/KG	73	DJ	6	U	320		58	D	220	
100-42-5	Styrene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
75-25-2	Bromoform	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
98-82-8	Isopropylbenzene	SW8260B-S	UG/KG	17	DJ	6	U	25		52	U	31	
79-34-5	1,1,2,2-Tetrachloroethane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
108-86-1	Bromobenzene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
96-18-4	1,2,3-Trichloropropane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
103-65-1	n-Propylbenzene	SW8260B-S	UG/KG	23	DJ	6	U	58		52	U	74	
95-49-8	2-Chlorotoluene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
108-67-8	1,3,5-Trimethyl Benzene	SW8260B-S	UG/KG	79	DJ	6	U	310		36	DJ	340	
106-43-4	4-Chlorotoluene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
96-06-6	tert-butylbenzene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
95-63-6	1,2,4-Trimethylbenzene	SW8260B-S	UG/KG	220	D	6	U	690	E	86	D	850	E
135-96-8	sec-butylbenzene	SW8260B-S	UG/KG	46	DJ	6	U	98		52	U	100	
99-87-6	Cymene	SW8260B-S	UG/KG	170	D	6	U	240		22	DJ	18	
541-73-1	1,3-Dichlorobenzene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
106-46-7	1,4-Dichlorobenzene	SW8260B-S	UG/KG	84	U	6	U	31		52	U	110	
104-51-8	n-Butylbenzene	SW8260B-S	UG/KG	110	D	6	U	240		24	DJ	240	
95-50-1	1,2-Dichlorobenzene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
96-12-8	1,2-Dibromo-3-chloropropane	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
120-82-1	1,2,4-Trichlorobenzene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
87-68-3	Hexachlorobutadiene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U
91-20-3	Naphthalene	SW8260B-S	UG/KG	83	DJ	6	U	70		52	U	55	
87-61-6	1,2,3-Trichlorobenzene	SW8260B-S	UG/KG	84	U	6	U	10	U	52	U	10	U

Notes:
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DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
B - Detected in associated blank sample
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code Location Sample Matrix Unit Date:	SF-2004-B08DL SF-2004-B08 Sediment 4/21/2004		SF-2004-B09 SF-2004-B09 Sediment 4/21/2004		SF-2004-B09DL SF-2004-B09 Sediment 4/21/2004		SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B10DL SF-2004-B10 Sediment 4/22/2004	
(Group Code)	**(Group Description)**												
Voas													
75-71-8	Dichlorodifluoromethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
74-87-3	Chloromethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
75-01-4	Vinyl Chloride	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
74-83-9	Bromomethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
75-00-3	Chloroethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
75-69-4	Trichlorofluoromethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
75-35-4	1,1-Dichloroethene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
67-64-1	Acetone	SW8260B-S	UG/KG	640	D	2400	E	2700	D	580		420	D
74-88-4	Iodomethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
75-15-0	Carbon Disulfide	SW8260B-S	UG/KG	11	DJ	22		34	DJ	17	J	11	DJ
75-09-2	Methylene Chloride	SW8260B-S	UG/KG	40	U	3	J	43	DJB	6	J	14	DJB
156-60-5	trans-1,2-Dichloroethene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
1634-04-4	Methyl tert-Butyl Ether	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
75-34-3	1,1-Dichloroethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
108-05-4	Vinyl Acetate	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
78-93-3	2-Butanone	SW8260B-S	UG/KG	40	U	1000	E	680	D	300		180	D
156-59-2	cis-1,2-Dichloroethene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
594-20-7	2,2-Dichloropropane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
74-97-5	Chlorobromomethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
67-66-3	Chloroform	SW8260B-S	UG/KG	8	DJ	12	U	21	DJ	18	U	5	DJ
71-55-6	1,1,1-Trichloroethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
26952-23-8	1,1-Dichloropropene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
56-23-5	Carbon Tetrachloride	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
107-06-2	1,2-Dichloroethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
71-43-2	Benzene	SW8260B-S	UG/KG	40	U	13		100	U	5	J	26	U
79-01-6	Trichloroethene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
78-87-5	1,2-Dichloropropane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
74-95-3	Dibromomethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
75-27-4	Bromodichloromethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
10061-01-5	cis-1,3-Dichloropropene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
108-10-1	4-Methyl-2-pentanone	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
108-88-3	Toluene	SW8260B-S	UG/KG	40	U	42		45	DJ	34		15	DJ
10061-02-6	trans-1,3-Dichloropropene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
79-00-5	1,1,2-Trichloroethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
142-28-9	1,3-Dichloropropane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
127-18-4	Tetrachloroethene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
591-78-6	2-Hexanone	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B08DL / SF-2004-B08 / Sediment / 4/21/2004		SF-2004-B09 / SF-2004-B09 / Sediment / 4/21/2004		SF-2004-B09DL / SF-2004-B09 / Sediment / 4/21/2004		SF-2004-B10 / SF-2004-B10 / Sediment / 4/22/2004		SF-2004-B10DL / SF-2004-B10 / Sediment / 4/22/2004	
124-48-1	Dibromochloromethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
106-93-4	1,2-Dibromoethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
108-90-7	Chlorobenzene	SW8260B-S	UG/KG	40	U	12	U	100	U	8	J	26	U
630-20-6	1,1,1,2-Tetrachlorroethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
100-41-4	Ethylbenzene	SW8260B-S	UG/KG	40	U	23		100	U	61		19	DJ
106-42-3	p-Xylene	SW8260B-S	UG/KG	26	DJ	220		140	D	210		66	D
95-47-6	o-Xylene	SW8260B-S	UG/KG	59	D	220		140	D	120		42	D
1330-20-7	Xylenes (total)	SW8260B-S	UG/KG	85	D	440		280	D	330		110	D
100-42-5	Styrene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
75-25-2	Bromoform	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
98-82-8	Isopropylbenzene	SW8260B-S	UG/KG	9	DJ	51		27	DJ	25		7	DJ
79-34-5	1,1,2,2-Tetrachloroethane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
108-86-1	Bromobenzene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
96-18-4	1,2,3-Trichloropropane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
103-65-1	n-Propylbenzene	SW8260B-S	UG/KG	15	DJ	100		38	DJ	63		14	DJ
95-49-8	2-Chlorotoluene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
108-67-8	1,3,5-Trimethyl Benzene	SW8260B-S	UG/KG	85	D	500	E	200	D	260		61	D
106-43-4	4-Chlorotoluene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
96-06-6	tert-butylbenzene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
95-63-6	1,2,4-Trimethylbenzene	SW8260B-S	UG/KG	190	D	1300	E	540	D	730	E	190	D
135-96-8	sec-butylbenzene	SW8260B-S	UG/KG	20	DJ	200		72	DJ	67		13	DJ
99-87-6	Cymene	SW8260B-S	UG/KG	40	U	400		140	D	460		110	D
541-73-1	1,3-Dichlorobenzene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
106-46-7	1,4-Dichlorobenzene	SW8260B-S	UG/KG	39	DJ	12	U	100	U	200		60	D
104-51-8	n-Butylbenzene	SW8260B-S	UG/KG	48	D	420		160	D	160		34	D
95-50-1	1,2-Dichlorobenzene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
96-12-8	1,2-Dibromo-3-chloropropane	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
120-82-1	1,2,4-Trichlorobenzene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
87-68-3	Hexachlorobutadiene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U
91-20-3	Naphthalene	SW8260B-S	UG/KG	28	DJ	130		71	DJ	670		290	D
87-61-6	1,2,3-Trichlorobenzene	SW8260B-S	UG/KG	40	U	12	U	100	U	18	U	26	U

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
B - Detected in associated blank sample
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B11DL SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B12DL SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004	
(Group Code)	**(Group Description)**												
VOAs													
75-71-8	Dichlorodifluoromethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
74-87-3	Chloromethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
75-01-4	Vinyl Chloride	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
74-83-9	Bromomethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
75-00-3	Chloroethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
75-69-4	Trichlorofluoromethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
75-35-4	1,1-Dichloroethene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
67-64-1	Acetone	SW8260B-S	UG/KG	770	E	610	D	1500	E	720	D	27	
74-88-4	Iodomethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
75-15-0	Carbon Disulfide	SW8260B-S	UG/KG	18		10	DJ	29		120	U	6	U
75-09-2	Methylene Chloride	SW8260B-S	UG/KG	14	U	27	U	19	U	63	DJB	6	U
156-60-5	trans-1,2-Dichloroethene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
1634-04-4	Methyl tert-Butyl Ether	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
75-34-3	1,1-Dichloroethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
108-05-4	Vinyl Acetate	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
78-93-3	2-Butanone	SW8260B-S	UG/KG	390		250	D	860	E	350	D	6	U
156-59-2	cis-1,2-Dichloroethene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
594-20-7	2,2-Dichloropropane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
74-97-5	Chlorobromomethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
67-66-3	Chloroform	SW8260B-S	UG/KG	14	U	6	DJ	19	U	26	DJ	2	J
71-55-6	1,1,1-Trichloroethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
26952-23-8	1,1-Dichloropropene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
56-23-5	Carbon Tetrachloride	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
107-06-2	1,2-Dichloroethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
71-43-2	Benzene	SW8260B-S	UG/KG	4	J	27	U	11	J	120	U	6	U
79-01-6	Trichloroethene	SW8260B-S	UG/KG	14	U	27	U	6	J	120	U	6	U
78-87-5	1,2-Dichloropropane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
74-95-3	Dibromomethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
75-27-4	Bromodichloromethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
10061-01-5	cis-1,3-Dichloropropene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
108-10-1	4-Methyl-2-pentanone	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
108-88-3	Toluene	SW8260B-S	UG/KG	28		17	DJ	230		100	DJ	6	U
10061-02-6	trans-1,3-Dichloropropene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
79-00-5	1,1,2-Trichloroethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
142-28-9	1,3-Dichloropropane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
127-18-4	Tetrachloroethene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
591-78-6	2-Hexanone	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B11DL SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B12DL SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004	
124-48-1	Dibromochloromethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
106-93-4	1,2-Dibromoethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
108-90-7	Chlorobenzene	SW8260B-S	UG/KG	6	J	27	U	19	U	120	U	16	
630-20-6	1,1,1,2-Tetrachlorroethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
100-41-4	Ethylbenzene	SW8260B-S	UG/KG	36		21	DJ	87		120	U	6	U
106-42-3	p-Xylene	SW8260B-S	UG/KG	180		98	D	530		140	D	1	J
95-47-6	o-Xylene	SW8260B-S	UG/KG	100		58	D	280		78	DJ	3	J
1330-20-7	Xylenes (total)	SW8260B-S	UG/KG	280		160	D	810		220	D	4	J
100-42-5	Styrene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
75-25-2	Bromoform	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
98-82-8	Isopropylbenzene	SW8260B-S	UG/KG	21		11	DJ	64		120	U	6	U
79-34-5	1,1,2,2-Tetrachloroethane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
108-86-1	Bromobenzene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
96-18-4	1,2,3-Trichloropropane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
103-65-1	n-Propylbenzene	SW8260B-S	UG/KG	51		21	DJ	190		26	DJ	6	U
95-49-8	2-Chlorotoluene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	2	J
108-67-8	1,3,5-Trimethyl Benzene	SW8260B-S	UG/KG	280		120	D	770		120	DJ	7	
106-43-4	4-Chlorotoluene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
96-06-6	tert-butylbenzene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
95-63-6	1,2,4-Trimethylbenzene	SW8260B-S	UG/KG	720	E	340	D	2000	E	350	D	12	
135-96-8	sec-butylbenzene	SW8260B-S	UG/KG	72		28	D	240		120	U	6	U
99-87-6	Cymene	SW8260B-S	UG/KG	240		99	D	820	E	110	DJ	6	U
541-73-1	1,3-Dichlorobenzene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
106-46-7	1,4-Dichlorobenzene	SW8260B-S	UG/KG	84		40	D	130		29	DJ	17	
104-51-8	n-Butylbenzene	SW8260B-S	UG/KG	180		69	D	620		88	DJ	3	J
95-50-1	1,2-Dichlorobenzene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	3	J
96-12-8	1,2-Dibromo-3-chloropropane	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
120-82-1	1,2,4-Trichlorobenzene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
87-68-3	Hexachlorobutadiene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U
91-20-3	Naphthalene	SW8260B-S	UG/KG	620	E	310	D	590		160	D	6	J
87-61-6	1,2,3-Trichlorobenzene	SW8260B-S	UG/KG	14	U	27	U	19	U	120	U	6	U

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
B - Detected in associated blank sample
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G01 SF-2004-G01 Sediment 4/20/04		SF-2004-G02 SF-2004-G02 Sediment 4/20/04		SF-2004-G02DL SF-2004-G02 Sediment 4/20/04		SF-2004-G03 SF-2004-G03 Sediment 4/21/2004	
(Group Code)	**(Group Description)**										
VOAs											
75-71-8	Dichlorodifluoromethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
74-87-3	Chloromethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-01-4	Vinyl Chloride	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
74-83-9	Bromomethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-00-3	Chloroethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-69-4	Trichlorofluoromethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-35-4	1,1-Dichloroethene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
67-64-1	Acetone	SW8260B-S	UG/KG	49		67		610	U	8	J
74-88-4	Iodomethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-15-0	Carbon Disulfide	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-09-2	Methylene Chloride	SW8260B-S	UG/KG	9	U	9	J	610	U	3	JB
156-60-5	trans-1,2-Dichloroethene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
1634-04-4	Methyl tert-Butyl Ether	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-34-3	1,1-Dichloroethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
108-05-4	Vinyl Acetate	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
78-93-3	2-Butanone	SW8260B-S	UG/KG	19		12	U	390	DJ	8	U
156-59-2	cis-1,2-Dichloroethene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
594-20-7	2,2-Dichloropropane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
74-97-5	Chlorobromomethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
67-66-3	Chloroform	SW8260B-S	UG/KG	9	U	12	U	610	U	2	J
71-55-6	1,1,1-Trichloroethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
26952-23-8	1,1-Dichloropropene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
56-23-5	Carbon Tetrachloride	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
107-06-2	1,2-Dichloroethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
71-43-2	Benzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
79-01-6	Trichloroethene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
78-87-5	1,2-Dichloropropane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
74-95-3	Dibromomethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-27-4	Bromodichloromethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
10061-01-5	cis-1,3-Dichloropropene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
108-10-1	4-Methyl-2-pentanone	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
108-88-3	Toluene	SW8260B-S	UG/KG	11		2100	E	8000	D	17	
10061-02-6	trans-1,3-Dichloropropene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
79-00-5	1,1,2-Trichloroethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
142-28-9	1,3-Dichloropropane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
127-18-4	Tetrachloroethene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
591-78-6	2-Hexanone	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G01 SF-2004-G01 Sediment 4/20/04		SF-2004-G02 SF-2004-G02 Sediment 4/20/04		SF-2004-G02DL SF-2004-G02 Sediment 4/20/04		SF-2004-G03 SF-2004-G03 Sediment 4/21/2004	
124-48-1	Dibromochloromethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
106-93-4	1,2-Dibromoethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
108-90-7	Chlorobenzene	SW8260B-S	UG/KG	2	J	5	J	610	U	8	U
630-20-6	1,1,1,2-Tetrachlorroethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
100-41-4	Ethylbenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
106-42-3	p-Xylene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
95-47-6	o-Xylene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
1330-20-7	Xylenes (total)	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
100-42-5	Styrene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
75-25-2	Bromoform	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
98-82-8	Isopropylbenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
79-34-5	1,1,2,2-Tetrachloroethane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
108-86-1	Bromobenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
96-18-4	1,2,3-Trichloropropane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
103-65-1	n-Propylbenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
95-49-8	2-Chlorotoluene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
108-67-8	1,3,5-Trimethyl Benzene	SW8260B-S	UG/KG	4	J	11	J	610	U	8	U
106-43-4	4-Chlorotoluene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
96-06-6	tert-butylbenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
95-63-6	1,2,4-Trimethylbenzene	SW8260B-S	UG/KG	9		22		610	U	8	U
135-96-8	sec-butylbenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
99-87-6	Cymene	SW8260B-S	UG/KG	4	J	140		350	DJ	2	J
541-73-1	1,3-Dichlorobenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
106-46-7	1,4-Dichlorobenzene	SW8260B-S	UG/KG	9	U	15		610	U	8	U
104-51-8	n-Butylbenzene	SW8260B-S	UG/KG	3	J	12	U	610	U	8	U
95-50-1	1,2-Dichlorobenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
96-12-8	1,2-Dibromo-3-chloropropane	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
120-82-1	1,2,4-Trichlorobenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
87-68-3	Hexachlorobutadiene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U
91-20-3	Naphthalene	SW8260B-S	UG/KG	19		34		610	U	3	J
87-61-6	1,2,3-Trichlorobenzene	SW8260B-S	UG/KG	9	U	12	U	610	U	8	U

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
B - Detected in associated blank sample
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G04 / SF-2004-G04 / Sediment / 4/21/2004		SF-2004-G04DL / SF-2004-G04 / Sediment / 4/21/2004		SF-2004-G05 / SF-2004-G05 / Sediment / 4/22/2004	
(Group Code)	**(Group Description)**								
VOAs									
75-71-8	Dichlorodifluoromethane	SW8260B-S	UG/KG	6	U	13	U	6	U
74-87-3	Chloromethane	SW8260B-S	UG/KG	6	U	13	U	6	U
75-01-4	Vinyl Chloride	SW8260B-S	UG/KG	6	U	13	U	6	U
74-83-9	Bromomethane	SW8260B-S	UG/KG	6	U	13	U	6	U
75-00-3	Chloroethane	SW8260B-S	UG/KG	6	U	13	U	6	U
75-69-4	Trichlorofluoromethane	SW8260B-S	UG/KG	6	U	13	U	6	U
75-35-4	1,1-Dichloroethene	SW8260B-S	UG/KG	6	U	13	U	6	U
67-64-1	Acetone	SW8260B-S	UG/KG	30		49	D	13	
74-88-4	Iodomethane	SW8260B-S	UG/KG	6	U	13	U	6	U
75-15-0	Carbon Disulfide	SW8260B-S	UG/KG	6	U	13	U	6	U
75-09-2	Methylene Chloride	SW8260B-S	UG/KG	3	J	13	U	3	JB
156-60-5	trans-1,2-Dichloroethene	SW8260B-S	UG/KG	6	U	13	U	6	U
1634-04-4	Methyl tert-Butyl Ether	SW8260B-S	UG/KG	6	U	13	U	6	U
75-34-3	1,1-Dichloroethane	SW8260B-S	UG/KG	6	U	13	U	6	U
108-05-4	Vinyl Acetate	SW8260B-S	UG/KG	6	U	13	U	6	U
78-93-3	2-Butanone	SW8260B-S	UG/KG	6	U	13	U	6	U
156-59-2	cis-1,2-Dichloroethene	SW8260B-S	UG/KG	6	U	13	U	6	U
594-20-7	2,2-Dichloropropane	SW8260B-S	UG/KG	6	U	13	U	6	U
74-97-5	Chlorobromomethane	SW8260B-S	UG/KG	6	U	13	U	6	U
67-66-3	Chloroform	SW8260B-S	UG/KG	6	U	13	U	1	J
71-55-6	1,1,1-Trichloroethane	SW8260B-S	UG/KG	6	U	13	U	6	U
26952-23-8	1,1-Dichloropropene	SW8260B-S	UG/KG	6	U	13	U	6	U
56-23-5	Carbon Tetrachloride	SW8260B-S	UG/KG	6	U	13	U	6	U
107-06-2	1,2-Dichloroethane	SW8260B-S	UG/KG	6	U	13	U	6	U
71-43-2	Benzene	SW8260B-S	UG/KG	6	U	13	U	6	U
79-01-6	Trichloroethene	SW8260B-S	UG/KG	6	U	13	U	6	U
78-87-5	1,2-Dichloropropane	SW8260B-S	UG/KG	6	U	13	U	6	U
74-95-3	Dibromomethane	SW8260B-S	UG/KG	6	U	13	U	6	U
75-27-4	Bromodichloromethane	SW8260B-S	UG/KG	6	U	13	U	6	U
10061-01-5	cis-1,3-Dichloropropene	SW8260B-S	UG/KG	6	U	13	U	6	U
108-10-1	4-Methyl-2-pentanone	SW8260B-S	UG/KG	6	U	13	U	6	U
108-88-3	Toluene	SW8260B-S	UG/KG	290	E	260	D	6	U
10061-02-6	trans-1,3-Dichloropropene	SW8260B-S	UG/KG	6	U	13	U	6	U
79-00-5	1,1,2-Trichloroethane	SW8260B-S	UG/KG	6	U	13	U	6	U
142-28-9	1,3-Dichloropropane	SW8260B-S	UG/KG	6	U	13	U	6	U
127-18-4	Tetrachloroethene	SW8260B-S	UG/KG	6	U	13	U	6	U
591-78-6	2-Hexanone	SW8260B-S	UG/KG	6	U	13	U	6	U

Summary Table of Analytical Results

Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code Location Sample Matrix Unit Date:	SF-2004-G04 SF-2004-G04 Sediment 4/21/2004		SF-2004-G04DL SF-2004-G04 Sediment 4/21/2004		SF-2004-G05 SF-2004-G05 Sediment 4/22/2004	
124-48-1	Dibromochloromethane	SW8260B-S	UG/KG	6	U	13	U	6	U
106-93-4	1,2-Dibromoethane	SW8260B-S	UG/KG	6	U	13	U	6	U
108-90-7	Chlorobenzene	SW8260B-S	UG/KG	3	J	5	DJ	3	J
630-20-6	1,1,1,2-Tetrachlorroethane	SW8260B-S	UG/KG	6	U	13	U	6	U
100-41-4	Ethylbenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
106-42-3	p-Xylene	SW8260B-S	UG/KG	6	U	13	U	6	U
95-47-6	o-Xylene	SW8260B-S	UG/KG	6	U	13	U	6	U
1330-20-7	Xylenes (total)	SW8260B-S	UG/KG	6	U	13	U	6	U
100-42-5	Styrene	SW8260B-S	UG/KG	6	U	13	U	6	U
75-25-2	Bromoform	SW8260B-S	UG/KG	6	U	13	U	6	U
98-82-8	Isopropylbenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
79-34-5	1,1,2,2-Tetrachloroethane	SW8260B-S	UG/KG	6	U	13	U	6	U
108-86-1	Bromobenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
96-18-4	1,2,3-Trichloropropane	SW8260B-S	UG/KG	6	U	13	U	6	U
103-65-1	n-Propylbenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
95-49-8	2-Chlorotoluene	SW8260B-S	UG/KG	6	U	13	U	6	U
108-67-8	1,3,5-Trimethyl Benzene	SW8260B-S	UG/KG	2	J	13	U	6	U
106-43-4	4-Chlorotoluene	SW8260B-S	UG/KG	6	U	13	U	6	U
96-06-6	tert-butylbenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
95-63-6	1,2,4-Trimethylbenzene	SW8260B-S	UG/KG	3	J	4	DJ	1	J
135-96-8	sec-butylbenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
99-87-6	Cymene	SW8260B-S	UG/KG	10		16	D	6	U
541-73-1	1,3-Dichlorobenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
106-46-7	1,4-Dichlorobenzene	SW8260B-S	UG/KG	6	J	10	DJ	4	J
104-51-8	n-Butylbenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
95-50-1	1,2-Dichlorobenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
96-12-8	1,2-Dibromo-3-chloropropane	SW8260B-S	UG/KG	6	U	13	U	6	U
120-82-1	1,2,4-Trichlorobenzene	SW8260B-S	UG/KG	6	U	13	U	6	U
87-68-3	Hexachlorobutadiene	SW8260B-S	UG/KG	6	U	13	U	6	U
91-20-3	Naphthalene	SW8260B-S	UG/KG	6	J	9	DJ	3	J
87-61-6	1,2,3-Trichlorobenzene	SW8260B-S	UG/KG	6	U	13	U	6	U

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
B - Detected in associated blank sample
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A / SF-2004-B01A / Sediment / 4/21/2004		SF-2004-B02 / SF-2004-B02 / Sediment / 4/20/2004		SF-2004-B02DL / SF-2004-B02 / Sediment / 4/20/2004		SF-2004-B03 / SF-2004-B03 / Sediment / 4/20/2004		SF-2004-B04 / SF-2004-B04 / Sediment / 4/21/2004	
(Group Code)	**(Group Description)**												
SVOCs/BNAs													
108-95-2	Phenol	SW8270C-S	UG/KG	3600	U	110	J	4600	U	3800	U	3200	U
111-44-4	bis(2-Chloroethyl) ether	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
95-57-8	2-Chlorophenol	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
541-73-1	1,3-Dichlorobenzene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
106-46-7	1,4-Dichlorobenzene	SW8270C-S	UG/KG	3600	U	1800		1400	DJ	3800	U	3200	U
95-50-1	1,2-Dichlorobenzene	SW8270C-S	UG/KG	3600	U	130	J	4600	U	3800	U	3200	U
95-48-7	2-Methylphenol	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
106-44-5	4-Methylphenol	SW8270C-S	UG/KG	3600	U	1700		1200	DJ	3800	U	3200	U
621-64-7	n-Nitroso-di-n-propylamine	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
67-72-1	Hexachloroethane	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
98-95-3	Nitrobenzene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
78-59-1	Isophorone	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
88-75-5	2-Nitrophenol	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
105-67-9	2,4-Dimethylphenol	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
120-83-2	2,4-Dichlorophenol	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
120-82-1	1,2,4-Trichlorobenzene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
91-20-3	Naphthalene	SW8270C-S	UG/KG	4400		2600		2000	DJ	960	J	950	J
106-47-8	4-Chloroaniline	SW8270C-S	UG/KG	3600	U	1900		4600	U	3800	U	3200	U
111-91-1	bis(2-Chloroethoxy)methane	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
87-68-3	Hexachlorobutadiene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
59-50-7	4-Chloro-3-methylphenol	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
91-57-6	2-Methylnaphthalene	SW8270C-S	UG/KG	3600		1500		1100	DJ	5600		8100	
77-47-4	Hexachlorocyclopentadiene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
95-95-4	2,4,5-Trichlorophenol	SW8270C-S	UG/KG	7200	U	1800	U	9300	U	7700	U	6400	U
91-58-7	2-Chloronaphthalene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
88-74-4	2-Nitroaniline	SW8270C-S	UG/KG	7200	U	1800	U	9300	U	7700	U	6400	U
131-11-3	Dimethylphthalate	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
208-96-8	Acenaphthylene	SW8270C-S	UG/KG	2700	J	490	J	4600	U	3800	U	3200	U
606-20-2	2,6-Dinitrotoluene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
99-09-2	3-Nitroaniline	SW8270C-S	UG/KG	7200	U	1800	U	9300	U	7700	U	6400	U
83-32-9	Acenaphthene	SW8270C-S	UG/KG	2800	J	3700		3000	DJ	3800	U	3200	U
51-28-5	2,4-Dinitrophenol	SW8270C-S	UG/KG	7200	U	1800	U	9300	U	7700	U	6400	U
100-02-7	4-Nitrophenol	SW8270C-S	UG/KG	7200	U	1800	U	9300	U	7700	U	6400	U
132-64-9	Dibenzofuran	SW8270C-S	UG/KG	1200	J	2100		1700	DJ	1300	J	1900	J
121-14-2	2,4-Dinitrotoluene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A / SF-2004-B01A / Sediment / UG/KG / 4/21/2004		SF-2004-B02 / SF-2004-B02 / Sediment / UG/KG / 4/20/2004		SF-2004-B02DL / SF-2004-B02 / Sediment / UG/KG / 4/20/2004		SF-2004-B03 / SF-2004-B03 / Sediment / UG/KG / 4/20/2004		SF-2004-B04 / SF-2004-B04 / Sediment / UG/KG / 4/21/2004	
84-66-2	Diethylphthalate	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
7005-72-3	4-Chlorophenyl-phenylether	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
86-73-7	Fluorene	SW8270C-S	UG/KG	3000	J	4200		3000	DJ	2000	J	2500	J
100-01-6	4-Nitroaniline	SW8270C-S	UG/KG	7200	U	1800	U	9300	U	7700	U	6400	U
534-52-1	4,6-Dinitro-2-methylphenol	SW8270C-S	UG/KG	7200	U	1800	U	9300	U	7700	U	6400	U
86-30-6	n-Nitrosodiphenylamine	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
101-55-3	4-Bromophenyl-phenylether	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
118-74-1	Hexachlorobenzene	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
87-86-5	Pentachlorophenol	SW8270C-S	UG/KG	7200	U	1800	U	9300	U	7700	U	6400	U
85-01-8	Phenanthrene	SW8270C-S	UG/KG	22000		52000	E	38000	D	13000		17000	
120-12-7	Anthracene	SW8270C-S	UG/KG	6400		8400		6300	D	2100	J	2500	J
86-74-8	Carbazole	SW8270C-S	UG/KG	3600	U	5400		3900	DJ	3800	U	3200	U
84-74-2	Di-n-butylphthalate	SW8270C-S	UG/KG	3600	U	560	J	4600	U	3800	U	3200	U
206-44-0	Fluoranthene	SW8270C-S	UG/KG	28000		64000	E	51000	D	14000		18000	
129-00-0	Pyrene	SW8270C-S	UG/KG	23000		45000	E	40000	D	12000		12000	
85-68-7	Butylbenzylphthalate	SW8270C-S	UG/KG	3600	U	590	J	840	DJ	3800	U	3200	U
91-94-1	3,3'-Dichlorobenzidine	SW8270C-S	UG/KG	3600	U	910	U	4600	U	3800	U	3200	U
56-55-3	Benzo(a)anthracene	SW8270C-S	UG/KG	12000		20000	E	18000	D	5700		6200	
218-01-9	Chrysene	SW8270C-S	UG/KG	20000		21000	E	30000	D	11000		12000	
117-81-7	bis(2-Ethylhexyl) phthalate	SW8270C-S	UG/KG	2400	J	45000	E	46000	D	18000		14000	
117-84-0	Di-n-octylphthalate	SW8270C-S	UG/KG	3600	U	1100		1300	DJ	3800	U	3200	U
205-99-2	Benzo(b)fluoranthene	SW8270C-S	UG/KG	12000		26000	E	21000	D	7900		8600	
207-08-9	Benzo(k)fluoranthene	SW8270C-S	UG/KG	3800		10000		8500	D	2800	J	3200	
50-32-8	Benzo(a)pyrene	SW8270C-S	UG/KG	10000		20000	E	16000	D	5000		5500	
193-39-5	Indeno(1,2,3-cd)pyrene	SW8270C-S	UG/KG	4400		10000		8900	D	2800	J	2900	J
53-70-3	Dibenz(a,h)anthracene	SW8270C-S	UG/KG	1500	J	4700		2700	DJ	980	J	920	J
191-24-2	Benzo(g,h,i)perylene	SW8270C-S	UG/KG	5800		13000		11000	D	3400	J	3500	

Notes:
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J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code Location Sample Matrix Unit Date:	SF-2004-B05 SF-2004-B05 Sediment 4/21/2004		SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/2004		SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004	
(Group Code)	**(Group Description)**										
SVOCs/BNAs											
108-95-2	Phenol	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
111-44-4	bis(2-Chloroethyl) ether	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
95-57-8	2-Chlorophenol	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
541-73-1	1,3-Dichlorobenzene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
106-46-7	1,4-Dichlorobenzene	SW8270C-S	UG/KG	360	J	840	J	1000	J	5500	U
95-50-1	1,2-Dichlorobenzene	SW8270C-S	UG/KG	3300	U	5000	U	550	J	5500	U
95-48-7	2-Methylphenol	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
106-44-5	4-Methylphenol	SW8270C-S	UG/KG	3300	U	870	J	620	J	5500	U
621-64-7	n-Nitroso-di-n-propylamine	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
67-72-1	Hexachloroethane	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
98-95-3	Nitrobenzene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
78-59-1	Isophorone	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
88-75-5	2-Nitrophenol	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
105-67-9	2,4-Dimethylphenol	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
120-83-2	2,4-Dichlorophenol	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
120-82-1	1,2,4-Trichlorobenzene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
91-20-3	Naphthalene	SW8270C-S	UG/KG	1800	J	4000	J	1100	J	5500	U
106-47-8	4-Chloroaniline	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
111-91-1	bis(2-Chloroethoxy)methane	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
87-68-3	Hexachlorobutadiene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
59-50-7	4-Chloro-3-methylphenol	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
91-57-6	2-Methylnaphthalene	SW8270C-S	UG/KG	9800		18000		5100		5500	U
77-47-4	Hexachlorocyclopentadiene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
95-95-4	2,4,5-Trichlorophenol	SW8270C-S	UG/KG	6800	U	10000	U	8600	U	11000	U
91-58-7	2-Chloronaphthalene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
88-74-4	2-Nitroaniline	SW8270C-S	UG/KG	6800	U	10000	U	8600	U	11000	U
131-11-3	Dimethylphthalate	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
208-96-8	Acenaphthylene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
606-20-2	2,6-Dinitrotoluene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
99-09-2	3-Nitroaniline	SW8270C-S	UG/KG	6800	U	10000	U	8600	U	11000	U
83-32-9	Acenaphthene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	1400	J
51-28-5	2,4-Dinitrophenol	SW8270C-S	UG/KG	6800	U	10000	U	8600	U	11000	U
100-02-7	4-Nitrophenol	SW8270C-S	UG/KG	6800	U	10000	U	8600	U	11000	U
132-64-9	Dibenzofuran	SW8270C-S	UG/KG	3300	U	3600	J	1100	J	5500	U
121-14-2	2,4-Dinitrotoluene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B05 SF-2004-B05 Sediment 4/21/2004		SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/2004		SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004	
84-66-2	Diethylphthalate	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
7005-72-3	4-Chlorophenyl-phenylether	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
86-73-7	Fluorene	SW8270C-S	UG/KG	2700	J	4300	J	1600	J	1500	J
100-01-6	4-Nitroaniline	SW8270C-S	UG/KG	6800	U	10000	U	8600	U	11000	U
534-52-1	4,6-Dinitro-2-methylphenol	SW8270C-S	UG/KG	6800	U	10000	U	8600	U	11000	U
86-30-6	n-Nitrosodiphenylamine	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
101-55-3	4-Bromophenyl-phenylether	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
118-74-1	Hexachlorobenzene	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
87-86-5	Pentachlorophenol	SW8270C-S	UG/KG	6800	U	10000	U	8600	U	11000	U
85-01-8	Phenanthrene	SW8270C-S	UG/KG	17000		27000		10000		20000	
120-12-7	Anthracene	SW8270C-S	UG/KG	2500	J	4200	J	1700	J	9400	
86-74-8	Carbazole	SW8270C-S	UG/KG	3300	U	5000	U	780	J	5500	U
84-74-2	Di-n-butylphthalate	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
206-44-0	Fluoranthene	SW8270C-S	UG/KG	14000		23000		13000		46000	
129-00-0	Pyrene	SW8270C-S	UG/KG	12000		16000		7500		41000	
85-68-7	Butylbenzylphthalate	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
91-94-1	3,3'-Dichlorobenzidine	SW8270C-S	UG/KG	3300	U	5000	U	4200	U	5500	U
56-55-3	Benzo(a)anthracene	SW8270C-S	UG/KG	5200		8100		4100	J	16000	
218-01-9	Chrysene	SW8270C-S	UG/KG	10000		17000		7900		22000	
117-81-7	bis(2-Ethylhexyl) phthalate	SW8270C-S	UG/KG	12000		18000		41000		5500	U
117-84-0	Di-n-octylphthalate	SW8270C-S	UG/KG	3300	U	5000	U	510	J	5500	U
205-99-2	Benzo(b)fluoranthene	SW8270C-S	UG/KG	6900		11000		5800		9300	
207-08-9	Benzo(k)fluoranthene	SW8270C-S	UG/KG	2600	J	4000	J	2400	J	3900	J
50-32-8	Benzo(a)pyrene	SW8270C-S	UG/KG	4400		7300		3900	J	6900	
193-39-5	Indeno(1,2,3-cd)pyrene	SW8270C-S	UG/KG	2200	J	3900	J	2200	J	3000	J
53-70-3	Dibenz(a,h)anthracene	SW8270C-S	UG/KG	740	J	1200	J	4200	U	5500	U
191-24-2	Benzo(g,h,i)perylene	SW8270C-S	UG/KG	2600	J	4400	J	2600	J	3200	J

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B08 / SF-2004-B08 / Sediment / 4/21/2004		SF-2004-B09 / SF-2004-B09 / Sediment / 4/21/2004		SF-2004-B10 / SF-2004-B10 / Sediment / 4/22/2004		SF-2004-B11 / SF-2004-B11 / Sediment / 4/22/2004	
(Group Code)	**(Group Description)**										
SVOCs/BNAs											
108-95-2	Phenol	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
111-44-4	bis(2-Chloroethyl) ether	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
95-57-8	2-Chlorophenol	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
541-73-1	1,3-Dichlorobenzene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
106-46-7	1,4-Dichlorobenzene	SW8270C-S	UG/KG	1100	J	680	J	2600	J	2800	
95-50-1	1,2-Dichlorobenzene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
95-48-7	2-Methylphenol	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
106-44-5	4-Methylphenol	SW8270C-S	UG/KG	3400	U	4000	U	640	J	560	U
621-64-7	n-Nitroso-di-n-propylamine	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
67-72-1	Hexachloroethane	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
98-95-3	Nitrobenzene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
78-59-1	Isophorone	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
88-75-5	2-Nitrophenol	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
105-67-9	2,4-Dimethylphenol	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
120-83-2	2,4-Dichlorophenol	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
120-82-1	1,2,4-Trichlorobenzene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
91-20-3	Naphthalene	SW8270C-S	UG/KG	1600	J	2100	J	5800		10000	E
106-47-8	4-Chloroaniline	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
111-91-1	bis(2-Chloroethoxy)methane	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
87-68-3	Hexachlorobutadiene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
59-50-7	4-Chloro-3-methylphenol	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
91-57-6	2-Methylnaphthalene	SW8270C-S	UG/KG	7600		17000		11000		8500	
77-47-4	Hexachlorocyclopentadiene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
95-95-4	2,4,5-Trichlorophenol	SW8270C-S	UG/KG	7000	U	8100	U	11000	U	1100	U
91-58-7	2-Chloronaphthalene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
88-74-4	2-Nitroaniline	SW8270C-S	UG/KG	7000	U	8100	U	11000	U	1100	U
131-11-3	Dimethylphthalate	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
208-96-8	Acenaphthylene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
606-20-2	2,6-Dinitrotoluene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
99-09-2	3-Nitroaniline	SW8270C-S	UG/KG	7000	U	8100	U	11000	U	1100	U
83-32-9	Acenaphthene	SW8270C-S	UG/KG	3400	U	4000	U	4400	J	8900	
51-28-5	2,4-Dinitrophenol	SW8270C-S	UG/KG	7000	U	8100	U	11000	U	1100	U
100-02-7	4-Nitrophenol	SW8270C-S	UG/KG	7000	U	8100	U	11000	U	1100	U
132-64-9	Dibenzofuran	SW8270C-S	UG/KG	3400	U	3500	J	2700	J	5800	
121-14-2	2,4-Dinitrotoluene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B08 SF-2004-B08 Sediment 4/21/2004		SF-2004-B09 SF-2004-B09 Sediment 4/21/2004		SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B11 SF-2004-B11 Sediment 4/22/2004	
84-66-2	Diethylphthalate	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
7005-72-3	4-Chlorophenyl-phenylether	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
86-73-7	Fluorene	SW8270C-S	UG/KG	2500	J	5200		4900	J	10000	E
100-01-6	4-Nitroaniline	SW8270C-S	UG/KG	7000	U	8100	U	11000	U	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	SW8270C-S	UG/KG	7000	U	8100	U	11000	U	1100	U
86-30-6	n-Nitrosodiphenylamine	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
101-55-3	4-Bromophenyl-phenylether	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
118-74-1	Hexachlorobenzene	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
87-86-5	Pentachlorophenol	SW8270C-S	UG/KG	7000	U	8100	U	11000	U	1100	U
85-01-8	Phenanthrene	SW8270C-S	UG/KG	20000		40000		40000		63000	E
120-12-7	Anthracene	SW8270C-S	UG/KG	2400	J	6000		5700		13000	E
86-74-8	Carbazole	SW8270C-S	UG/KG	1100	J	4000	U	4300	J	8800	
84-74-2	Di-n-butylphthalate	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
206-44-0	Fluoranthene	SW8270C-S	UG/KG	20000		41000		52000		62000	E
129-00-0	Pyrene	SW8270C-S	UG/KG	15000		29000		31000		37000	E
85-68-7	Butylbenzylphthalate	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
91-94-1	3,3'-Dichlorobenzidine	SW8270C-S	UG/KG	3400	U	4000	U	5600	U	560	U
56-55-3	Benzo(a)anthracene	SW8270C-S	UG/KG	6600		13000		16000		48000	E
218-01-9	Chrysene	SW8270C-S	UG/KG	13000		28000		27000		2500	
117-81-7	bis(2-Ethylhexyl) phthalate	SW8270C-S	UG/KG	29000		15000		30000		17000	E
117-84-0	Di-n-octylphthalate	SW8270C-S	UG/KG	370	J	4000	U	5600	U	560	U
205-99-2	Benzo(b)fluoranthene	SW8270C-S	UG/KG	9000		19000		20000		22000	E
207-08-9	Benzo(k)fluoranthene	SW8270C-S	UG/KG	3800		5800		7600		2200	
50-32-8	Benzo(a)pyrene	SW8270C-S	UG/KG	6200		12000		14000		28000	E
193-39-5	Indeno(1,2,3-cd)pyrene	SW8270C-S	UG/KG	3300	J	5900		7600		11000	E
53-70-3	Dibenz(a,h)anthracene	SW8270C-S	UG/KG	1100	J	2000	J	2400	J	4800	
191-24-2	Benzo(g,h,i)perylene	SW8270C-S	UG/KG	3800		7200		8800		9800	E

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code Location Sample Matrix Unit Date:	SF-2004-B11DL SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B12DL SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004	
(Group Code)	**(Group Description)**										
SVOCs/BNAs											
108-95-2	Phenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
111-44-4	bis(2-Chloroethyl) ether	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
95-57-8	2-Chlorophenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
541-73-1	1,3-Dichlorobenzene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
106-46-7	1,4-Dichlorobenzene	SW8270C-S	UG/KG	2300	DJ	550	J	3200	U	1600	
95-50-1	1,2-Dichlorobenzene	SW8270C-S	UG/KG	5600	U	230	J	3200	U	350	J
95-48-7	2-Methylphenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
106-44-5	4-Methylphenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	250	J
621-64-7	n-Nitroso-di-n-propylamine	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
67-72-1	Hexachloroethane	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
98-95-3	Nitrobenzene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
78-59-1	Isophorone	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
88-75-5	2-Nitrophenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
105-67-9	2,4-Dimethylphenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
120-83-2	2,4-Dichlorophenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
120-82-1	1,2,4-Trichlorobenzene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
91-20-3	Naphthalene	SW8270C-S	UG/KG	5500	DJ	2100		1400	DJ	11000	E
106-47-8	4-Chloroaniline	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
111-91-1	bis(2-Chloroethoxy)methane	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
87-68-3	Hexachlorobutadiene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
59-50-7	4-Chloro-3-methylphenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
91-57-6	2-Methylnaphthalene	SW8270C-S	UG/KG	3900	DJ	9700		8500	D	4600	
77-47-4	Hexachlorocyclopentadiene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
95-95-4	2,4,5-Trichlorophenol	SW8270C-S	UG/KG	11000	U	1600	U	6500	U	840	U
91-58-7	2-Chloronaphthalene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
88-74-4	2-Nitroaniline	SW8270C-S	UG/KG	11000	U	1600	U	6500	U	840	U
131-11-3	Dimethylphthalate	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
208-96-8	Acenaphthylene	SW8270C-S	UG/KG	5600	U	2400		3200	U	1100	
606-20-2	2,6-Dinitrotoluene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
99-09-2	3-Nitroaniline	SW8270C-S	UG/KG	11000	U	1600	U	6500	U	840	U
83-32-9	Acenaphthene	SW8270C-S	UG/KG	6400	D	800	U	3200	U	8400	E
51-28-5	2,4-Dinitrophenol	SW8270C-S	UG/KG	11000	U	1600	U	6500	U	840	U
100-02-7	4-Nitrophenol	SW8270C-S	UG/KG	11000	U	1600	U	6500	U	840	U
132-64-9	Dibenzofuran	SW8270C-S	UG/KG	4100	DJ	800	U	1400	DJ	6400	
121-14-2	2,4-Dinitrotoluene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B11DL SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B12DL SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004	
84-66-2	Diethylphthalate	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
7005-72-3	4-Chlorophenyl-phenylether	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
86-73-7	Fluorene	SW8270C-S	UG/KG	6300	D	800	U	2200	DJ	10000	E
100-01-6	4-Nitroaniline	SW8270C-S	UG/KG	11000	U	1600	U	6500	U	840	U
534-52-1	4,6-Dinitro-2-methylphenol	SW8270C-S	UG/KG	11000	U	1600	U	6500	U	840	U
86-30-6	n-Nitrosodiphenylamine	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
101-55-3	4-Bromophenyl-phenylether	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
118-74-1	Hexachlorobenzene	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
87-86-5	Pentachlorophenol	SW8270C-S	UG/KG	11000	U	1600	U	6500	U	840	U
85-01-8	Phenanthrene	SW8270C-S	UG/KG	72000	D	16000	E	16000	D	56000	E
120-12-7	Anthracene	SW8270C-S	UG/KG	9600	D	3000		2200	DJ	14000	E
86-74-8	Carbazole	SW8270C-S	UG/KG	7600	D	800	U	3200	U	8500	E
84-74-2	Di-n-butylphthalate	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
206-44-0	Fluoranthene	SW8270C-S	UG/KG	80000	D	10000		15000	D	52000	E
129-00-0	Pyrene	SW8270C-S	UG/KG	64000	D	9400		10000	D	39000	E
85-68-7	Butylbenzylphthalate	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
91-94-1	3,3'-Dichlorobenzidine	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
56-55-3	Benzo(a)anthracene	SW8270C-S	UG/KG	25000	D	15000	E	5000	D	44000	E
218-01-9	Chrysene	SW8270C-S	UG/KG	46000	D	1100		11000	D	2100	
117-81-7	bis(2-Ethylhexyl) phthalate	SW8270C-S	UG/KG	12000	D	30000	E	19000	D	8200	E
117-84-0	Di-n-octylphthalate	SW8270C-S	UG/KG	5600	U	800	U	3200	U	420	U
205-99-2	Benzo(b)fluoranthene	SW8270C-S	UG/KG	33000	D	9700		7200	D	24000	E
207-08-9	Benzo(k)fluoranthene	SW8270C-S	UG/KG	11000	D	1300		3100	DJ	2600	
50-32-8	Benzo(a)pyrene	SW8270C-S	UG/KG	22000	D	5600		4900	D	33000	E
193-39-5	Indeno(1,2,3-cd)pyrene	SW8270C-S	UG/KG	12000	D	4500		2800	DJ	16000	E
53-70-3	Dibenz(a,h)anthracene	SW8270C-S	UG/KG	3900	DJ	800	U	880	DJ	6700	
191-24-2	Benzo(g,h,i)perylene	SW8270C-S	UG/KG	14000	D	2500		3400	D	16000	E

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code Location Sample Matrix Unit Date:	SF-2004-B13DL SF-2004-B13 Sediment 4/22/2004		SF-2004-G01 SF-2004-G01 Sediment 4/20/2004		SF-2004-G01DL SF-2004-G01 Sediment 4/20/2004		SF-2004-G02 SF-2004-G02 Sediment 4/20/2004	
(Group Code)	**(Group Description)**										
SVOCs/BNAs											
108-95-2	Phenol	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
111-44-4	bis(2-Chloroethyl) ether	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
95-57-8	2-Chlorophenol	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
541-73-1	1,3-Dichlorobenzene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
106-46-7	1,4-Dichlorobenzene	SW8270C-S	UG/KG	1400	DJ	480	J	2300	U	1000	
95-50-1	1,2-Dichlorobenzene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
95-48-7	2-Methylphenol	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
106-44-5	4-Methylphenol	SW8270C-S	UG/KG	8300	U	910		740	DJ	5200	
621-64-7	n-Nitroso-di-n-propylamine	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
67-72-1	Hexachloroethane	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
98-95-3	Nitrobenzene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
78-59-1	Isophorone	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
88-75-5	2-Nitrophenol	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
105-67-9	2,4-Dimethylphenol	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
120-83-2	2,4-Dichlorophenol	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
120-82-1	1,2,4-Trichlorobenzene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
91-20-3	Naphthalene	SW8270C-S	UG/KG	7900	DJ	940		740	DJ	880	
106-47-8	4-Chloroaniline	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
111-91-1	bis(2-Chloroethoxy)methane	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
87-68-3	Hexachlorobutadiene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
59-50-7	4-Chloro-3-methylphenol	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
91-57-6	2-Methylnaphthalene	SW8270C-S	UG/KG	3200	DJ	710		550	DJ	900	
77-47-4	Hexachlorocyclopentadiene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
95-95-4	2,4,5-Trichlorophenol	SW8270C-S	UG/KG	17000	U	1200	U	4800	U	1600	U
91-58-7	2-Chloronaphthalene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
88-74-4	2-Nitroaniline	SW8270C-S	UG/KG	17000	U	1200	U	4800	U	1600	U
131-11-3	Dimethylphthalate	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
208-96-8	Acenaphthylene	SW8270C-S	UG/KG	8300	U	1000		720	DJ	410	J
606-20-2	2,6-Dinitrotoluene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
99-09-2	3-Nitroaniline	SW8270C-S	UG/KG	17000	U	1200	U	4800	U	1600	U
83-32-9	Acenaphthene	SW8270C-S	UG/KG	7400	DJ	1300		1000	DJ	1200	
51-28-5	2,4-Dinitrophenol	SW8270C-S	UG/KG	17000	U	1200	U	4800	U	1600	U
100-02-7	4-Nitrophenol	SW8270C-S	UG/KG	17000	U	1200	U	4800	U	1600	U
132-64-9	Dibenzofuran	SW8270C-S	UG/KG	5200	DJ	680		620	DJ	620	J
121-14-2	2,4-Dinitrotoluene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B13DL / SF-2004-B13 / Sediment / 4/22/2004		SF-2004-G01 / SF-2004-G01 / Sediment / 4/20/2004		SF-2004-G01DL / SF-2004-G01 / Sediment / 4/20/2004		SF-2004-G02 / SF-2004-G02 / Sediment / 4/20/2004	
84-66-2	Diethylphthalate	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
7005-72-3	4-Chlorophenyl-phenylether	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
86-73-7	Fluorene	SW8270C-S	UG/KG	7900	DJ	1500		1200	DJ	1600	
100-01-6	4-Nitroaniline	SW8270C-S	UG/KG	17000	U	1200	U	4800	U	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	SW8270C-S	UG/KG	17000	U	1200	U	4800	U	1600	U
86-30-6	n-Nitrosodiphenylamine	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
101-55-3	4-Bromophenyl-phenylether	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
118-74-1	Hexachlorobenzene	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
87-86-5	Pentachlorophenol	SW8270C-S	UG/KG	17000	U	1200	U	4800	U	1600	U
85-01-8	Phenanthrene	SW8270C-S	UG/KG	100000	D	13000	E	10000	D	13000	E
120-12-7	Anthracene	SW8270C-S	UG/KG	12000	D	3200		2400	D	2900	
86-74-8	Carbazole	SW8270C-S	UG/KG	9900	D	980		780	DJ	1700	
84-74-2	Di-n-butylphthalate	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
206-44-0	Fluoranthene	SW8270C-S	UG/KG	110000	D	18000	E	15000	D	24000	E
129-00-0	Pyrene	SW8270C-S	UG/KG	93000	D	12000	E	11000	D	16000	E
85-68-7	Butylbenzylphthalate	SW8270C-S	UG/KG	8300	U	340	J	2300	U	800	U
91-94-1	3,3'-Dichlorobenzidine	SW8270C-S	UG/KG	8300	U	590	U	2300	U	800	U
56-55-3	Benzo(a)anthracene	SW8270C-S	UG/KG	34000	D	6400		5600	D	6900	
218-01-9	Chrysene	SW8270C-S	UG/KG	60000	D	6300		9000	D	8100	
117-81-7	bis(2-Ethylhexyl) phthalate	SW8270C-S	UG/KG	6300	DJ	12000	E	12000	D	21000	E
117-84-0	Di-n-octylphthalate	SW8270C-S	UG/KG	8300	U	590	U	480	DJ	800	U
205-99-2	Benzo(b)fluoranthene	SW8270C-S	UG/KG	40000	D	6300		7300	D	11000	
207-08-9	Benzo(k)fluoranthene	SW8270C-S	UG/KG	15000	D	2000		2400	D	800	U
50-32-8	Benzo(a)pyrene	SW8270C-S	UG/KG	28000	D	5000		5400	D	7400	
193-39-5	Indeno(1,2,3-cd)pyrene	SW8270C-S	UG/KG	16000	D	2800		3000	D	4400	
53-70-3	Dibenz(a,h)anthracene	SW8270C-S	UG/KG	4300	DJ	1000		880	DJ	1600	
191-24-2	Benzo(g,h,i)perylene	SW8270C-S	UG/KG	18000	D	3400		3400	D	4800	

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G02DL / SF-2004-G02 / Sediment / 4/20/2004		SF-2004-G03 / SF-2004-G03 / Sediment / 4/21/2004		SF-2004-G04 / SF-2004-G04 / Sediment / 4/21/2004		SF-2004-G05 / SF-2004-G05 / Sediment / 4/22/2004	
(Group Code)	**(Group Description)**										
SVOCs/BNAs											
108-95-2	Phenol	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
111-44-4	bis(2-Chloroethyl) ether	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
95-57-8	2-Chlorophenol	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
541-73-1	1,3-Dichlorobenzene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
106-46-7	1,4-Dichlorobenzene	SW8270C-S	UG/KG	900	DJ	4200	U	420	J	110	J
95-50-1	1,2-Dichlorobenzene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
95-48-7	2-Methylphenol	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
106-44-5	4-Methylphenol	SW8270C-S	UG/KG	4000	D	530	J	1200		430	U
621-64-7	n-Nitroso-di-n-propylamine	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
67-72-1	Hexachloroethane	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
98-95-3	Nitrobenzene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
78-59-1	Isophorone	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
88-75-5	2-Nitrophenol	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
105-67-9	2,4-Dimethylphenol	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
120-83-2	2,4-Dichlorophenol	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
120-82-1	1,2,4-Trichlorobenzene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
91-20-3	Naphthalene	SW8270C-S	UG/KG	3200	U	980	J	360	J	120	J
106-47-8	4-Chloroaniline	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
111-91-1	bis(2-Chloroethoxy)methane	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
87-68-3	Hexachlorobutadiene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
59-50-7	4-Chloro-3-methylphenol	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
91-57-6	2-Methylnaphthalene	SW8270C-S	UG/KG	690	DJ	4400		260	J	120	J
77-47-4	Hexachlorocyclopentadiene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
95-95-4	2,4,5-Trichlorophenol	SW8270C-S	UG/KG	6500	U	8600	U	940	U	880	U
91-58-7	2-Chloronaphthalene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
88-74-4	2-Nitroaniline	SW8270C-S	UG/KG	6500	U	8600	U	940	U	880	U
131-11-3	Dimethylphthalate	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
208-96-8	Acenaphthylene	SW8270C-S	UG/KG	3200	U	4200	U	120	J	430	U
606-20-2	2,6-Dinitrotoluene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
99-09-2	3-Nitroaniline	SW8270C-S	UG/KG	6500	U	8600	U	940	U	880	U
83-32-9	Acenaphthene	SW8270C-S	UG/KG	810	DJ	4200	U	310	J	160	J
51-28-5	2,4-Dinitrophenol	SW8270C-S	UG/KG	6500	U	8600	U	940	U	880	U
100-02-7	4-Nitrophenol	SW8270C-S	UG/KG	6500	U	8600	U	940	U	880	U
132-64-9	Dibenzofuran	SW8270C-S	UG/KG	550	DJ	960	J	200	J	83	J
121-14-2	2,4-Dinitrotoluene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U

Summary Table of Analytical Data

Semi-Volatile Organic Compounds

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G02DL / SF-2004-G02 / Sediment / 4/20/2004		SF-2004-G03 / SF-2004-G03 / Sediment / 4/21/2004		SF-2004-G04 / SF-2004-G04 / Sediment / 4/21/2004		SF-2004-G05 / SF-2004-G05 / Sediment / 4/22/2004	
84-66-2	Diethylphthalate	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
7005-72-3	4-Chlorophenyl-phenylether	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
86-73-7	Fluorene	SW8270C-S	UG/KG	1000	DJ	1400	J	360	J	160	J
100-01-6	4-Nitroaniline	SW8270C-S	UG/KG	6500	U	8600	U	940	U	880	U
534-52-1	4,6-Dinitro-2-methylphenol	SW8270C-S	UG/KG	6500	U	8600	U	940	U	880	U
86-30-6	n-Nitrosodiphenylamine	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
101-55-3	4-Bromophenyl-phenylether	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
118-74-1	Hexachlorobenzene	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
87-86-5	Pentachlorophenol	SW8270C-S	UG/KG	6500	U	8600	U	940	U	880	U
85-01-8	Phenanthrene	SW8270C-S	UG/KG	11000	D	8800		4000		1800	
120-12-7	Anthracene	SW8270C-S	UG/KG	2100	DJ	1300	J	770		280	J
86-74-8	Carbazole	SW8270C-S	UG/KG	1300	DJ	810	J	500		430	U
84-74-2	Di-n-butylphthalate	SW8270C-S	UG/KG	3200	U	4200	U	460	U	83	J
206-44-0	Fluoranthene	SW8270C-S	UG/KG	19000	D	11000		7200		5200	
129-00-0	Pyrene	SW8270C-S	UG/KG	14000	D	7100		4000		1600	
85-68-7	Butylbenzylphthalate	SW8270C-S	UG/KG	880	DJ	4200	U	460	U	430	U
91-94-1	3,3'-Dichlorobenzidine	SW8270C-S	UG/KG	3200	U	4200	U	460	U	430	U
56-55-3	Benzo(a)anthracene	SW8270C-S	UG/KG	6800	D	3800	J	2000		920	
218-01-9	Chrysene	SW8270C-S	UG/KG	12000	D	7600		2600		1200	
117-81-7	bis(2-Ethylhexyl) phthalate	SW8270C-S	UG/KG	20000	D	37000		5200		2500	
117-84-0	Di-n-octylphthalate	SW8270C-S	UG/KG	820	DJ	4200	U	460	U	430	U
205-99-2	Benzo(b)fluoranthene	SW8270C-S	UG/KG	9400	D	5700		2500		1200	
207-08-9	Benzo(k)fluoranthene	SW8270C-S	UG/KG	3000	DJ	2000	J	770		84	J
50-32-8	Benzo(a)pyrene	SW8270C-S	UG/KG	5800	D	3600	J	3400		880	
193-39-5	Indeno(1,2,3-cd)pyrene	SW8270C-S	UG/KG	3400	D	2100	J	1300		1800	
53-70-3	Dibenz(a,h)anthracene	SW8270C-S	UG/KG	950	DJ	650	J	460	U	740	
191-24-2	Benzo(g,h,i)perylene	SW8270C-S	UG/KG	4200	D	2600	J	1200		2400	

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring (PAH-SIM)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code Location Sample Matrix Unit	Date:	SF-2004-B01A SF-2004-B01A Sediment 4/21/2004		SF-2004-B02 SF-2004-B02 Sediment 4/20/2004		SF-2004-B03 SF-2004-B03 Sediment 4/20/2004		SF-2004-B04 SF-2004-B04 Sediment 4/21/2004		SF-2004-B05 SF-2004-B05 Sediment 4/21/2004	
(Group Code)	**(Group Description)**													
PAH-SIM														
91-20-3	Naphthalene	PAH_SIM	UG/KG		4600		2100		1000		600		1700	
91-57-6	2-Methylnaphthalene	PAH_SIM	UG/KG		5500		1300		8000	E	10000	E	13000	E
208-96-8	Acenaphthylene	PAH_SIM	UG/KG		2600		350		500		740		630	
83-32-9	Acenaphthene	PAH_SIM	UG/KG		3500		3600		1500		2300		1700	
86-73-7	Fluorene	PAH_SIM	UG/KG		5100		4100		2700		3600		2800	
85-01-8	Phenanthrene	PAH_SIM	UG/KG		23000	E	46000	E	12000	E	14000	E	12000	E
120-12-7	Anthracene	PAH_SIM	UG/KG		6800		8100		1800		2100		1800	
206-44-0	Fluoranthene	PAH_SIM	UG/KG		28000	E	64000	E	14000	E	15000	E	11000	E
129-00-0	Pyrene	PAH_SIM	UG/KG		24000	E	46000	E	12000	E	16000	E	8800	E
56-55-3	Benzo(a)anthracene	PAH_SIM	UG/KG		12000	E	22000	E	4900		5000		3800	
218-01-9	Chrysene	PAH_SIM	UG/KG		14000	E	24000	E	6900		9200	E	4800	
205-99-2	Benzo(b)fluoranthene	PAH_SIM	UG/KG		15000	E	20000	E	8500	E	8400	E	5600	
207-08-9	Benzo(k)fluoranthene	PAH_SIM	UG/KG		4900		10000	E	3400		3700		2600	
50-32-8	Benzo(a)pyrene	PAH_SIM	UG/KG		13000	E	17000	E	4600		4900		3700	
193-39-5	Indeno(1,2,3-cd)pyrene	PAH_SIM	UG/KG		3000		7000		2200		1500		1300	
53-70-3	Dibenz(a,h)anthracene	PAH_SIM	UG/KG		1200		2600		870		570		500	
191-24-2	Benzo(g,h,i)perylene	PAH_SIM	UG/KG		2800		8200		2200		1700		1400	

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram
PAH-SIM = Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring (PAH-SIM)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-D05 / SF-2004-D05 / Sed. (Duplicate) / 4/21/2004		SF-2004-B06 / SF-2004-B06 / Sediment / 4/21/2004		SF-2004-B07 / SF-2004-B07 / Sediment / 4/21/2004		SF-2004-B08 / SF-2004-B08 / Sediment / 4/21/2004	
(Group Code)	**(Group Description)**										
PAH-SIM											
91-20-3	Naphthalene	PAH_SIM	UG/KG	3100		870		480		1400	
91-57-6	2-Methylnaphthalene	PAH_SIM	UG/KG	21000	E	4600	E	430		9400	E
208-96-8	Acenaphthylene	PAH_SIM	UG/KG	1300		280		220		440	
83-32-9	Acenaphthene	PAH_SIM	UG/KG	3300		1500		1400		2100	
86-73-7	Fluorene	PAH_SIM	UG/KG	4700		1900		1800		3600	
85-01-8	Phenanthrene	PAH_SIM	UG/KG	24000	E	8100	E	23000	E	17000	E
120-12-7	Anthracene	PAH_SIM	UG/KG	4100		880		13000	E	2000	
206-44-0	Fluoranthene	PAH_SIM	UG/KG	20000	E	10000	E	71000	E	20000	E
129-00-0	Pyrene	PAH_SIM	UG/KG	17000	E	7700	E	40000	E	15000	E
56-55-3	Benzo(a)anthracene	PAH_SIM	UG/KG	7700		4000		14000	E	7400	E
218-01-9	Chrysene	PAH_SIM	UG/KG	10000		4300		9800	E	9600	E
205-99-2	Benzo(b)fluoranthene	PAH_SIM	UG/KG	9800		5800	E	12000	E	8900	E
207-08-9	Benzo(k)fluoranthene	PAH_SIM	UG/KG	3000		1800		4000		3100	
50-32-8	Benzo(a)pyrene	PAH_SIM	UG/KG	5800		3400		7200	E	6000	
193-39-5	Indeno(1,2,3-cd)pyrene	PAH_SIM	UG/KG	2100		940		1400		1700	
53-70-3	Dibenz(a,h)anthracene	PAH_SIM	UG/KG	680		290		630		660	
191-24-2	Benzo(g,h,i)perylene	PAH_SIM	UG/KG	2100		1000		1200		2000	

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram
PAH-SIM = Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring

Data Qualifiers:
U - Compound was analyzed for but not detected (Un
J - Estimated concentration
D - Compound is identified at a secondary dilution fac
E = Above calibration range

Summary Table of Analytical Data

Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring (PAH-SIM)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B09 SF-2004-B09 Sediment 4/21/2004		SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004	
(Group Code)	**(Group Description)**										
PAH-SIM											
91-20-3	Naphthalene	PAH_SIM	UG/KG	1900		4900		5600		1400	
91-57-6	2-Methylnaphthalene	PAH_SIM	UG/KG	18000	E	14000	E	4100		12000	E
208-96-8	Acenaphthylene	PAH_SIM	UG/KG	780		720		430		580	
83-32-9	Acenaphthene	PAH_SIM	UG/KG	2900		4000		6800	E	2600	
86-73-7	Fluorene	PAH_SIM	UG/KG	5600		5800		7100	E	3600	
85-01-8	Phenanthrene	PAH_SIM	UG/KG	33000	E	48000	E	96000	E	18000	E
120-12-7	Anthracene	PAH_SIM	UG/KG	5300		6000		13000	E	1900	
206-44-0	Fluoranthene	PAH_SIM	UG/KG	38000	E	54000	E	110000	E	17000	E
129-00-0	Pyrene	PAH_SIM	UG/KG	25000	E	35000	E	72000	E	13000	E
56-55-3	Benzo(a)anthracene	PAH_SIM	UG/KG	13000	E	18000	E	26000	E	7200	
218-01-9	Chrysene	PAH_SIM	UG/KG	13000	E	17000	E	25000	E	7000	
205-99-2	Benzo(b)fluoranthene	PAH_SIM	UG/KG	21000	E	26000	E	61000	E	11000	E
207-08-9	Benzo(k)fluoranthene	PAH_SIM	UG/KG	5700		11000	E	19000	E	5000	
50-32-8	Benzo(a)pyrene	PAH_SIM	UG/KG	12000	E	18000	E	30000	E	5100	
193-39-5	Indeno(1,2,3-cd)pyrene	PAH_SIM	UG/KG	3200		5800		5800	E	1100	
53-70-3	Dibenz(a,h)anthracene	PAH_SIM	UG/KG	1000		1700		2200		440	
191-24-2	Benzo(g,h,i)perylene	PAH_SIM	UG/KG	3500		5300		5000		1300	

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram
PAH-SIM = Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring (PAH-SIM)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B13 SF-2004-B13 Sediment 4/22/2004		SF-2004-B13DL SF-2004-B13 Sediment 4/22/2004		SF-2004-G01 SF-2004-G01 Sediment 4/20/2004		SF-2004-G02 SF-2004-G02 Sediment 4/20/2004	
(Group Code)	**(Group Description)**										
PAH-SIM											
91-20-3	Naphthalene	PAH_SIM	UG/KG	10000	E	8600	D	870		660	
91-57-6	2-Methylnaphthalene	PAH_SIM	UG/KG	4200	E	4100	D	730		810	
208-96-8	Acenaphthylene	PAH_SIM	UG/KG	620		650	D	780		260	
83-32-9	Acenaphthene	PAH_SIM	UG/KG	9100	E	8100	D	1200		920	
86-73-7	Fluorene	PAH_SIM	UG/KG	11000	E	9100	D	1500		1200	
85-01-8	Phenanthrene	PAH_SIM	UG/KG	130000	E	94000	DE	11000	E	10000	E
120-12-7	Anthracene	PAH_SIM	UG/KG	18000	E	14000	DE	3100		2600	
206-44-0	Fluoranthene	PAH_SIM	UG/KG	140000	E	110000	DE	20000	E	18000	E
129-00-0	Pyrene	PAH_SIM	UG/KG	100000	E	97000	DE	12000	E	13000	E
56-55-3	Benzo(a)anthracene	PAH_SIM	UG/KG	40000	E	31000	DE	6000	E	6900	
218-01-9	Chrysene	PAH_SIM	UG/KG	41000	E	42000	DE	7000	E	7000	
205-99-2	Benzo(b)fluoranthene	PAH_SIM	UG/KG	96000	E	47000	DE	7000	E	9200	E
207-08-9	Benzo(k)fluoranthene	PAH_SIM	UG/KG	36000	E	21000	DE	3200		2700	
50-32-8	Benzo(a)pyrene	PAH_SIM	UG/KG	50000	E	36000	DE	5400		5700	
193-39-5	Indeno(1,2,3-cd)pyrene	PAH_SIM	UG/KG	11000	E	13000	DE	2400		2400	
53-70-3	Dibenz(a,h)anthracene	PAH_SIM	UG/KG	3800		3700	D	840		730	
191-24-2	Benzo(g,h,i)perylene	PAH_SIM	UG/KG	9100	E	14000	DE	2700		2600	

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram
PAH-SIM = Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary Table of Analytical Data

Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring (PAH-SIM)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code Location Sample Matrix Unit	Date:	SF-2004-G03 SF-2004-G03 Sediment 4/21/2004		SF-2004-G04 SF-2004-G04 Sediment 4/22/2004		SF-2004-G05 SF-2004-G05 Sediment 4/22/2004	
(Group Code)	**(Group Description)**									
PAH-SIM										
91-20-3	Naphthalene	PAH_SIM	UG/KG		780		300		120	
91-57-6	2-Methylnaphthalene	PAH_SIM	UG/KG		5100		320		170	
208-96-8	Acenaphthylene	PAH_SIM	UG/KG		240		56		47	
83-32-9	Acenaphthene	PAH_SIM	UG/KG		940		320		180	
86-73-7	Fluorene	PAH_SIM	UG/KG		1500		400		220	
85-01-8	Phenanthrene	PAH_SIM	UG/KG		8200	E	3700		2000	
120-12-7	Anthracene	PAH_SIM	UG/KG		1200		770		370	
206-44-0	Fluoranthene	PAH_SIM	UG/KG		11000	E	6900	E	3800	
129-00-0	Pyrene	PAH_SIM	UG/KG		7500	E	5100	E	3100	
56-55-3	Benzo(a)anthracene	PAH_SIM	UG/KG		3500		2100		1100	
218-01-9	Chrysene	PAH_SIM	UG/KG		5200		2600		1100	
205-99-2	Benzo(b)fluoranthene	PAH_SIM	UG/KG		5600	E	2700		1400	
207-08-9	Benzo(k)fluoranthene	PAH_SIM	UG/KG		2300		1400		470	
50-32-8	Benzo(a)pyrene	PAH_SIM	UG/KG		3800		2100		1000	
193-39-5	Indeno(1,2,3-cd)pyrene	PAH_SIM	UG/KG		1100		720		450	
53-70-3	Dibenz(a,h)anthracene	PAH_SIM	UG/KG		420		230		140	
191-24-2	Benzo(g,h,i)perylene	PAH_SIM	UG/KG		1100		880		400	

Notes:
B = Boring/Core sample
DL = Dilution
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram
PAH-SIM = Polynuclear Aromatic Hydrocarbons - Selective Ion Monitoring

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration
D - Compound is identified at a secondary dilution factor
E = Above calibration range

Summary of Analytical Data

Polychlorinated Biphenyls (PCBs)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A SF-2004-B01A Sediment 4/21/2004		SF-2004-B02 SF-2004-B02 Sediment 4/20/2004		SF-2004-B03 SF-2004-B03 Sediment 4/20/2004		SF-2004-B04 SF-2004-B04 Sediment 4/21/2004		SF-2004-B05 SF-2004-B05 Sediment 4/21/2004		SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/2004	
(Group Code)	**(Group Description)**														
PCBs															
12674-11-2	Aroclor-1016	SW8082	UG/KG	72	U	460	U	760	U	630	U	670	U	99	U
11104-28-2	Aroclor-1221	SW8082	UG/KG	72	U	460	U	760	U	630	U	670	U	99	U
11141-16-5	Aroclor-1232	SW8082	UG/KG	72	U	460	U	760	U	630	U	670	U	99	U
53469-21-9	Aroclor-1242	SW8082	UG/KG	72	U	460	U	760	U	630	U	670	U	99	U
12672-29-6	Aroclor-1248	SW8082	UG/KG	1300		5200		5900		7700		4400		2300	
11097-69-1	Aroclor-1254	SW8082	UG/KG	72	U	460	U	760	U	630	U	670	U	99	U
11096-82-5	Aroclor-1260	SW8082	UG/KG	600		2800		3300	P	3300	P	2500	P	1700	P

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
P - difference between column and confirmation column is > 25%.

Summary of Analytical Data

Polychlorinated Biphenyls (PCBs)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004		SF-2004-B08 SF-2004-B08 Sediment 4/21/2004		SF-2004-B09 SF-2004-B09 Sediment 4/21/2004		SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B11 SF-2004-B11 Sediment 4/22/2004	
(Group Code)	**(Group Description)**														
PCBs															
12674-11-2	Aroclor-1016	SW8082	UG/KG	43	U	680	U	680	U	800	U	700	U	57	U
11104-28-2	Aroclor-1221	SW8082	UG/KG	43	U	680	U	680	U	800	U	700	U	57	U
11141-16-5	Aroclor-1232	SW8082	UG/KG	43	U	680	U	680	U	800	U	700	U	57	U
53469-21-9	Aroclor-1242	SW8082	UG/KG	43	U	680	U	680	U	800	U	700	U	57	U
12672-29-6	Aroclor-1248	SW8082	UG/KG	43	U	4900		6700		7900		8000		870	
11097-69-1	Aroclor-1254	SW8082	UG/KG	43	U	680	U	680	U	800	U	700	U	57	U
11096-82-5	Aroclor-1260	SW8082	UG/KG	43	U	2400	P	2200	P	2400	P	2200	P	1000	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
P - difference between column and confirmation column is > 25%.

Summary of Analytical Data

Polychlorinated Biphenyls (PCBs)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004		SF-2004-G01 SF-2004-G01 Sediment 4/20/2004		SF-2004-G02 SF-2004-G02 Sediment 4/20/2004	
(Group Code)	**(Group Description)**										
PCBs											
12674-11-2	Aroclor-1016	SW8082	UG/KG	800	U	42	U	59	U	80	U
11104-28-2	Aroclor-1221	SW8082	UG/KG	800	U	42	U	59	U	80	U
11141-16-5	Aroclor-1232	SW8082	UG/KG	800	U	42	U	59	U	80	U
53469-21-9	Aroclor-1242	SW8082	UG/KG	800	U	42	U	59	U	80	U
12672-29-6	Aroclor-1248	SW8082	UG/KG	4900		310		280		460	
11097-69-1	Aroclor-1254	SW8082	UG/KG	800	U	42	U	59	U	80	U
11096-82-5	Aroclor-1260	SW8082	UG/KG	2500	P	840		490		910	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
P - difference between column and confirmation column is > 25%.

Summary of Analytical Data

Polychlorinated Biphenyls (PCBs)

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G03 SF-2004-G03 Sediment 4/21/2004		SF-2004-G04 SF-2004-G04 Sediment 4/21/2004		SF-2004-G05 SF-2004-G05 Sediment 4/22/2004	
(Group Code)	**(Group Description)**								
PCBs									
12674-11-2	Aroclor-1016	SW8082	UG/KG	53	U	46	U	43	U
11104-28-2	Aroclor-1221	SW8082	UG/KG	53	U	46	U	43	U
11141-16-5	Aroclor-1232	SW8082	UG/KG	53	U	46	U	43	U
53469-21-9	Aroclor-1242	SW8082	UG/KG	53	U	46	U	43	U
12672-29-6	Aroclor-1248	SW8082	UG/KG	53	U	100	P	110	P
11097-69-1	Aroclor-1254	SW8082	UG/KG	53	U	46	U	43	U
11096-82-5	Aroclor-1260	SW8082	UG/KG	510		360		480	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/KG = micrograms per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
P - difference between column and confirmation column is > 25%.

Summary Table of Analytical Results

Metals / Inorganic Compounds

South Fork/South Branch Chicago River

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A SF-2004-B01A Sediment 4/20/2004		SF-2004-B02 SF-2004-B02 Sediment 4/21/2004		SF-2004-B03 SF-2004-B03 Sediment 4/21/2004		SF-2004-B04 SF-2004-B04 Sediment 4/20/2004		SF-2004-B05 SF-2004-B05 Sediment 4/21/2004	
(Group Code)	**(Group Description)**												
metals													
7440-38-2	Arsenic	SW6010B-S	mg/Kg	24.4		28.4		26.8		25.2		26	
7440-39-3	Barium	SW6010B-S	mg/Kg	418		502		554		499		424	
7440-43-9	Cadmium	SW6010B-S	mg/Kg	28.5		20.6		20.2		20.3		17.2	
7440-47-3	Chromium	SW6010B-S	mg/Kg	2930	N	4440	N	436	N	474	N	769	N
7440-50-8	Copper	SW6010B-S	mg/Kg	361		473		444		434		396	
7439-92-1	Lead	SW6010B-S	mg/Kg	891		1640		2420		2060		1740	
7440-02-0	Nickel	SW6010B-S	mg/Kg	111		167		145		149		162	
7782-49-2	Selenium	SW6010B-S	mg/Kg	5.3		6.4		4.6		4.5		4.8	
7440-22-4	Silver	SW6010B-S	mg/Kg	9		14.9		36.4		29.8		28.5	
7440-66-6	Zinc	SW6010B-S	mg/Kg	6210		6260		4930		3810		4450	
7439-97-6	Mercury	SW7471A-S	mg/Kg	5.9		13.9		10.2		8.6		6.9	
57-12-5	Cyanide	SW9012B-S	mg/Kg	1.2	BN	9.3	N	8.1	N	6.3	N	3.1	N

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
mg/Kg = milligrams per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
B - reported value is less than reporting limit, but greater than instrument detection limit
N - Sample recovery not within control limits

Summary Table of Analytical Results

Metals / Inorganic Compounds

South Fork/South Branch Chicago River

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-D05 / SF-2004-D05 / Sed. (Duplicate) / 4/21/2004		SF-2004-B06 / SF-2004-B06 / Sediment / 4/21/2004		SF-2004-B07 / SF-2004-B07 / Sediment / 4/21/2004		SF-2004-B08 / SF-2004-B08 / Sediment / 4/21/2004		SF-2004-B09 / SF-2004-B09 / Sediment / 4/21/2004	
(Group Code)	**(Group Description)**												
metals													
7440-38-2	Arsenic	SW6010B-S	mg/Kg	34.1		13.9		19.7		13.5		35.2	
7440-39-3	Barium	SW6010B-S	mg/Kg	572		180		467		287		656	
7440-43-9	Cadmium	SW6010B-S	mg/Kg	24.6		1.9		12.2		8		23.4	
7440-47-3	Chromium	SW6010B-S	mg/Kg	1490	N	413	N	353	N	196	N	537	N
7440-50-8	Copper	SW6010B-S	mg/Kg	534		104		363		273		486	
7439-92-1	Lead	SW6010B-S	mg/Kg	2290		253		2460		1140		2820	
7440-02-0	Nickel	SW6010B-S	mg/Kg	247		26.2		106		75		175	
7782-49-2	Selenium	SW6010B-S	mg/Kg	6.8		4.6		4		2.6	B	6	
7440-22-4	Silver	SW6010B-S	mg/Kg	35.6		0.12	U	70.4		31.9		28.6	
7440-66-6	Zinc	SW6010B-S	mg/Kg	4830		559		2240		1410		6600	
7439-97-6	Mercury	SW7471A-S	mg/Kg	8.7		2.2		7.3		5		12	
57-12-5	Cyanide	SW9012B-S	mg/Kg	5.6	N	0.69	BN	5.5	N	5.6	N	9.3	N

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
mg/Kg = milligrams per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
B - reported value is less than reporting limit, but greater than instrument detection limit
N - Sample recovery not within control limits

Summary Table of Analytical Results

Metals / Inorganic Compounds

South Fork/South Branch Chicago River

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004		SF-2004-G01 SF-2004-G01 Sediment 4/22/2004	
(Group Code)	**(Group Description)**												
metals													
7440-38-2	Arsenic	SW6010B-S	mg/Kg	12.7		8.4		25.4		12.7		5.6	
7440-39-3	Barium	SW6010B-S	mg/Kg	397		379		659		108		122	
7440-43-9	Cadmium	SW6010B-S	mg/Kg	10.9		5.6		17.1		0.89		2.1	
7440-47-3	Chromium	SW6010B-S	mg/Kg	277	N	142	N	336	N	55.1	N	58.1	N
7440-50-8	Copper	SW6010B-S	mg/Kg	419		238		526		92		139	
7439-92-1	Lead	SW6010B-S	mg/Kg	1270		906		2140		263		326	
7440-02-0	Nickel	SW6010B-S	mg/Kg	101		56		119		39		22.2	
7782-49-2	Selenium	SW6010B-S	mg/Kg	3.2		2.3	B	5.1		1.4	B	1.6	B
7440-22-4	Silver	SW6010B-S	mg/Kg	30.7		10		66.1		2.3		6.8	
7440-66-6	Zinc	SW6010B-S	mg/Kg	1590		940		5170		207		395	
7439-97-6	Mercury	SW7471A-S	mg/Kg	15.9		2.6		11.7		2.6		0.72	
57-12-5	Cyanide	SW9012B-S	mg/Kg	1.1	BN	0.49	BN	2.1	BN	0.84	BN	0.72	BN

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
mg/Kg = milligrams per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
B - reported value is less than reporting limit, but greater than instrument detection limit
N - Sample recovery not within control limits

Summary Table of Analytical Results

Metals / Inorganic Compounds

South Fork/South Branch Chicago River

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G02 SF-2004-G02 Sediment 4/22/2004		SF-2004-G03 SF-2004-G03 Sediment 4/21/2004		SF-2004-G04 SF-2004-G04 Sediment 4/21/2004		SF-2004-G05 SF-2004-G05 Sediment 4/22/2004	
(Group Code) metals	**(Group Description)**										
7440-38-2	Arsenic	SW6010B-S	mg/Kg	7.4		4.3		3.3		2.6	
7440-39-3	Barium	SW6010B-S	mg/Kg	153		117		98.1		43	
7440-43-9	Cadmium	SW6010B-S	mg/Kg	2.4		1.4		2.1		1.5	
7440-47-3	Chromium	SW6010B-S	mg/Kg	71.3	N	40	N	31.1	N	30.8	N
7440-50-8	Copper	SW6010B-S	mg/Kg	164		138		79.8		106	
7439-92-1	Lead	SW6010B-S	mg/Kg	285		232		165		136	
7440-02-0	Nickel	SW6010B-S	mg/Kg	25.5		19.3		66.7		11.4	
7782-49-2	Selenium	SW6010B-S	mg/Kg	2.3	B	1.3	B	0.91	B	0.63	B
7440-22-4	Silver	SW6010B-S	mg/Kg	4.1		7.5		4.7		3.8	
7440-66-6	Zinc	SW6010B-S	mg/Kg	512		383		329		291	
7439-97-6	Mercury	SW7471A-S	mg/Kg	1		0.72		3		1.6	
57-12-5	Cyanide	SW9012B-S	mg/Kg	0.86	BN	0.56	BN	0.33	UN	0.33	UN

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
mg/Kg = milligrams per kilogram

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
B - reported value is less than reporting limit, but greater than instrument detection limit
N - Sample recovery not within control limits

Summary Table for Analytical Data

Wet Chemistry

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A / SF-2004-B01A / Sediment / 4/21/2004		SF-2004-B02 / SF-2004-B02 / Sediment / 4/20/2004		SF-2004-B03 / SF-2004-B03 / Sediment / 4/20/2004		SF-2004-B04 / SF-2004-B04 / Sediment / 4/21/2004		SF-2004-B05 / SF-2004-B05 / Sediment / 4/21/2004	
(Group Code)	**(Group Description)**												
Wetchem													
TVS	Total Volatile Solids	E160.4	wt%	22	B	20	B	26	B	26	B	12	B
7723-14-0	Phosphorus, Total (As P)	E365.2	mg/Kg	610		11000		540		5900		11000	
TOC	Total Organic Carbon	E415.1	mg/Kg	>120000		>150000		>140000		>140000		>160000	
NH3	Nitrogen, Ammonia	SM4500-NH3	mg/Kg	3200		13000		4100		3900		4700	
COD	Chemical, Oxygen Demand	SM5220	mg/Kg	2200		3400		4100		1700		1300	
IGNITB	Ignitibility	SW1010	deg F	No flash up to 119	U	Flash at 124		No flash up to 130	U	No flash up to 125	U	No flash up to 107	U
RECN	Reactive Cyanide	SW7.3.3.2	mg/Kg	2.2	U	2.8	U	2.3	U	1.9	U	2	U
RESF	Reactive Sulfide	SW7.3.4.2	mg/Kg	5200		8200		5000		4100		3200	
7440-47-3H	Chromium (+6)	SW7196	mg/Kg	8.56	U	11	U	8.94	U	7.66	U	7.85	U
pH	pH	SW9045	S.U.	7.9		8.1		8.1		8		8	
FL	Free Liquid	SW9095	mL/100g	1	U	1	U	1	U	1	U	1	U
O&G	Oil & Grease, Total Recoverable	E1664	mg/Kg	14000		20000		9000		10000		15000	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
mg/Kg = milligrams per kilogram
wt% = percent (weight basis)
deg F = degrees Fahrenheit
S.U. = standard units
mL/100g = milliliters per 100 grams

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
B - reported value is less than reporting limit, but greater than instrument detection limit

Summary Table for Analytical Data

Wet Chemistry

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/2004		SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004		SF-2004-B08 SF-2004-B08 Sediment 4/21/2004		SF-2004-B09 SF-2004-B09 Sediment 4/21/2004	
(Group Code)	**(Group Description)**												
Wetchem													
TVS	Total Volatile Solids	E160.4	wt%	26	B	11	B	22	B	6.8	B	46	B
7723-14-0	Phosphorus, Total (As P)	E365.2	mg/Kg	17000		1600		3100		7100		4700	
TOC	Total Organic Carbon	E415.1	mg/Kg	>170000		44000		>160000		84000		>170000	
NH3	Nitrogen, Ammonia	SM4500-NH3	mg/Kg	6700		170		2800		730		3600	
COD	Chemical, Oxygen Demand	SM5220	mg/Kg	6600		390	U	2900		1300		4800	
IGNITB	Ignitibility	SW1010	deg F			No flash up to 138	U	No flash up to 135	U	No flash up to 140	U	No flash up to 110	U
RECN	Reactive Cyanide	SW7.3.3.2	mg/Kg			1.2	U	2	U	2	U	2.3	U
RESF	Reactive Sulfide	SW7.3.4.2	mg/Kg			730		1100		2200		3200	
7440-47-3H	Chromium (+6)	SW7196	mg/Kg	12.5	U	5.32	U	8.33	U	8.33	U	9.38	U
pH	pH	SW9045	S.U.	7.8		7.7		7.9		7.6		8.2	
FL	Free Liquid	SW9095	mL/100g			10		1	U	1	U	1	U
O&G	Oil & Grease, Total Recoverable	E1664	mg/Kg	10000		2000		10000		8800		12000	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
mg/Kg = milligrams per kilogram
wt% = percent (weight basis)
deg F = degrees Fahrenheit
S.U. = standard units
mL/100g = milliliters per 100 grams

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
B - reported value is less than reporting limit, but greater than instrument detection limit

Summary Table for Analytical Data

Wet Chemistry

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment	
(Group Code)	**(Group Description)**										
Wetchem											
TVS	Total Volatile Solids	E160.4	wt%	26	B	7.2	B	21	B	5.4	B
7723-14-0	Phosphorus, Total (As P)	E365.2	mg/Kg	11000		10000		7700		3500	
TOC	Total Organic Carbon	E415.1	mg/Kg	>140000		38000		>130000		5900	
NH3	Nitrogen, Ammonia	SM4500-NH3	mg/Kg	3800		800		4800		110	
COD	Chemical, Oxygen Demand	SM5220	mg/Kg	4500		780		4900		380	U
IGNITB	Ignitibility	SW1010	deg F	No flash up to 137	U	No flash up to 137	U	No flash up to 138	U	No flash up to 145	U
RECN	Reactive Cyanide	SW7.3.3.2	mg/Kg	2	U	1.7	U	2.4	U	1.2	U
RESF	Reactive Sulfide	SW7.3.4.2	mg/Kg	42		640		910		110	
7440-47-3H	Chromium (+6)	SW7196	mg/Kg	8.83	U	7.01	U	9.96	U	5.06	U
pH	pH	SW9045	S.U.	8.5		8.2		8.4		7.7	
FL	Free Liquid	SW9095	mL/100g	1	U	13		1	U	4	
O&G	Oil & Grease, Total Recoverable	E1664	mg/Kg	10000		5300		8500		3300	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
mg/Kg = milligrams per kilogram
wt% = percent (weight basis)
deg F = degrees Fahrenheit
S.U. = standard units
mL/100g = milliliters per 100 grams

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
B - reported value is less than reporting limit, but greater than instrument detection limit

Summary Table for Analytical Data

Wet Chemistry

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G01 SF-2004-G01 Sediment		SF-2004-G02 SF-2004-G02 Sediment		SF-2004-G03 SF-2004-G03 Sediment		SF-2004-G04 SF-2004-G04 Sediment		SF-2004-G05 SF-2004-G05 Sediment	
(Group Code)	**(Group Description)**												
Wetchem													
TVS	Total Volatile Solids	E160.4	wt%	10	B	14	B	3	B	4.3	B	1.8	B
7723-14-0	Phosphorus, Total (As P)	E365.2	mg/Kg	1600	U	3400		1400	U	3000		5800	
TOC	Total Organic Carbon	E415.1	mg/Kg	87000		59000		23000		16000		10000	
NH3	Nitrogen, Ammonia	SM4500-NH3	mg/Kg	780		1400		160		120		62	
COD	Chemical, Oxygen Demand	SM5220	mg/Kg	540	U	870		680		430		430	
IGNITB	Ignitibility	SW1010	deg F										
RECN	Reactive Cyanide	SW7.3.3.2	mg/Kg										
RESF	Reactive Sulfide	SW7.3.4.2	mg/Kg										
7440-47-3H	Chromium (+6)	SW7196	mg/Kg	7.23	U	9.56	U	6.3	U	5.46	U	5.28	U
pH	pH	SW9045	S.U.										
FL	Free Liquid	SW9095	mL/100g										
O&G	Oil & Grease, Total Recoverable	E1664	mg/Kg	4700		3000		2200		2600		1300	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
mg/Kg = milligrams per kilogram
wt% = percent (weight basis)
deg F = degrees Fahrenheit
S.U. = standard units
mL/100g = milliliters per 100 grams

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
B - reported value is less than reporting limit, but greater than instrument detection limit

Summary Table of Analytical Data

Volatile Organic Compounds - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B01A SF-2004-B01A Sediment 4/21/2004		SF-2004-B02 SF-2004-B02 Sediment 4/20/2004		SF-2004-B03 SF-2004-B03 Sediment 4/20/2004		SF-2004-B04 SF-2004-B04 Sediment 4/21/2004		SF-2004-B05 SF-2004-B05 Sediment 4/21/2004	
(Group Code)	**(Group Description)**													
VOAs-TCLP														
75-01-4	Vinyl Chloride	SW8260B-TCLP	200	UG/L	5	U	5	U	5	U	5	U	5	U
75-35-4	1,1-Dichloroethene	SW8260B-TCLP	700	UG/L	5	U	5	U	5	U	5	U	5	U
78-93-3	2-Butanone	SW8260B-TCLP	200,000	UG/L	8		5	U	5	U	18		19	
67-66-3	Chloroform	SW8260B-TCLP	6000	UG/L	5	U	5	U	5	U	5	U	5	U
56-23-5	Carbon Tetrachloride	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U	5	U
107-06-2	1,2-Dichloroethane	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U	5	U
71-43-2	Benzene	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U	5	U
79-01-6	Trichloroethene	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U	5	U
127-18-4	Tetrachloroethene	SW8260B-TCLP	700	UG/L	5	U	5	U	5	U	5	U	5	U
108-90-7	Chlorobenzene	SW8260B-TCLP	100,000	UG/L	5	U	5	U	5	U	5	U	5	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liters
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration

Summary Table of Analytical Data

Volatile Organic Compounds - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/2004		SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004		SF-2004-B08 SF-2004-B08 Sediment 4/21/2004		SF-2004-B09 SF-2004-B09 Sediment 4/21/2004	
(Group Code)	**(Group Description)**													
VOAs-TCLP														
75-01-4	Vinyl Chloride	SW8260B-TCLP	200	UG/L	5	U	5	U	5	U	5	U	5	U
75-35-4	1,1-Dichloroethene	SW8260B-TCLP	700	UG/L	5	U	5	U	5	U	5	U	5	U
78-93-3	2-Butanone	SW8260B-TCLP	200,000	UG/L	24		4	J	19		38		35	
67-66-3	Chloroform	SW8260B-TCLP	6000	UG/L	5	U	5	U	5	U	5	U	5	U
56-23-5	Carbon Tetrachloride	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U	5	U
107-06-2	1,2-Dichloroethane	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U	5	U
71-43-2	Benzene	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U	5	U
79-01-6	Trichloroethene	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U	5	U
127-18-4	Tetrachloroethene	SW8260B-TCLP	700	UG/L	5	U	5	U	5	U	5	U	5	U
108-90-7	Chlorobenzene	SW8260B-TCLP	100,000	UG/L	5	U	5	U	5	U	5	U	5	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liters
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration

Summary Table of Analytical Data

Volatile Organic Compounds - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004	
(Group Code)	**(Group Description)**											
VOAs-TCLP												
75-01-4	Vinyl Chloride	SW8260B-TCLP	200	UG/L	5	U	5	U	5	U	5	U
75-35-4	1,1-Dichloroethene	SW8260B-TCLP	700	UG/L	5	U	5	U	5	U	5	U
78-93-3	2-Butanone	SW8260B-TCLP	200,000	UG/L	11		18		19		2	J
67-66-3	Chloroform	SW8260B-TCLP	6000	UG/L	5	U	5	U	5	U	5	U
56-23-5	Carbon Tetrachloride	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U
107-06-2	1,2-Dichloroethane	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U
71-43-2	Benzene	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U
79-01-6	Trichloroethene	SW8260B-TCLP	500	UG/L	5	U	5	U	5	U	5	U
127-18-4	Tetrachloroethene	SW8260B-TCLP	700	UG/L	5	U	5	U	5	U	5	U
108-90-7	Chlorobenzene	SW8260B-TCLP	100,000	UG/L	5	U	5	U	5	U	9	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liters
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration

Summary table of Analytical Data

Semi-Volatile Organic Compounds - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B01A SF-2004-B01A Sediment 4/21/2004		SF-2004-B02 SF-2004-B02 Sediment 4/20/2004		SF-2004-B03 SF-2004-B03 Sediment 4/20/2004		SF-2004-B04 SF-2004-B04 Sediment 4/21/2004		SF-2004-B05 SF-2004-B05 Sediment 4/21/2004	
(Group Code)	**(Group Description)**													
SVOCs/BNAs-TCLP														
106-46-7	1,4-Dichlorobenzene	SW8270C-TCLP	7500	UG/L	10	U	10	U	10	U	10	U	10	U
95-48-7	2-Methylphenol	SW8270C-TCLP	200,000	UG/L	10	U	10	U	10	U	10	U	10	U
106-44-5	4-Methylphenol	SW8270C-TCLP	200,000	UG/L	10	U	10	U	10	U	10	U	10	U
67-72-1	Hexachloroethane	SW8270C-TCLP	3000	UG/L	10	U	10	U	10	U	10	U	10	U
98-95-3	Nitrobenzene	SW8270C-TCLP	2000	UG/L	10	U	10	U	10	U	10	U	10	U
87-68-3	Hexachlorobutadiene	SW8270C-TCLP	500	UG/L	10	U	10	U	10	U	10	U	10	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-TCLP	200	UG/L	10	U	10	U	10	U	10	U	10	U
95-95-4	2,4,5-Trichlorophenol	SW8270C-TCLP	400,000	UG/L	20	U	20	U	20	U	20	U	20	U
121-14-2	2,4-Dinitrotoluene	SW8270C-TCLP	130	UG/L	10	U	10	U	10	U	10	U	10	U
118-74-1	Hexachlorobenzene	SW8270C-TCLP	130	UG/L	10	U	10	U	10	U	10	U	10	U
87-86-5	Pentachlorophenol	SW8270C-TCLP	100,000	UG/L	20	U	20	U	20	U	20	U	20	U
110-86-1	Pyridine	SW8270C-TCLP	5000	UG/L	10	U	10	U	10	U	10	U	10	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liters
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration

Summary table of Analytical Data

Semi-Volatile Organic Compounds - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/2004		SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004		SF-2004-B08 SF-2004-B08 Sediment 4/21/2004	
(Group Code)	**(Group Description)**											
SVOCs/BNAs-TCLP												
106-46-7	1,4-Dichlorobenzene	SW8270C-TCLP	7500	UG/L	10	U	10	U	10	U	10	U
95-48-7	2-Methylphenol	SW8270C-TCLP	200,000	UG/L	10	U	10	U	10	U	10	U
106-44-5	4-Methylphenol	SW8270C-TCLP	200,000	UG/L	10	U	10	U	10	U	10	U
67-72-1	Hexachloroethane	SW8270C-TCLP	3000	UG/L	10	U	10	U	10	U	10	U
98-95-3	Nitrobenzene	SW8270C-TCLP	2000	UG/L	10	U	10	U	10	U	10	U
87-68-3	Hexachlorobutadiene	SW8270C-TCLP	500	UG/L	10	U	10	U	10	U	10	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-TCLP	200	UG/L	10	U	10	U	10	U	10	U
95-95-4	2,4,5-Trichlorophenol	SW8270C-TCLP	400,000	UG/L	20	U	20	U	20	U	20	U
121-14-2	2,4-Dinitrotoluene	SW8270C-TCLP	130	UG/L	10	U	10	U	10	U	10	U
118-74-1	Hexachlorobenzene	SW8270C-TCLP	130	UG/L	10	U	10	U	10	U	10	U
87-86-5	Pentachlorophenol	SW8270C-TCLP	100,000	UG/L	20	U	20	U	20	U	20	U
110-86-1	Pyridine	SW8270C-TCLP	5000	UG/L	10	U	10	U	10	U	10	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liters
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Und
J - Estimated concentration

Summary table of Analytical Data

Semi-Volatile Organic Compounds - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B09 SF-2004-B09 Sediment 4/21/2004		SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004	
(Group Code)	**(Group Description)**													
SVOCs/BNAs-TCLP														
106-46-7	1,4-Dichlorobenzene	SW8270C-TCLP	7500	UG/L	10	U	10	U	10	U	10	U	2	J
95-48-7	2-Methylphenol	SW8270C-TCLP	200,000	UG/L	10	U	10	U	10	U	10	U	10	U
106-44-5	4-Methylphenol	SW8270C-TCLP	200,000	UG/L	10	U	10	U	10	U	10	U	2	J
67-72-1	Hexachloroethane	SW8270C-TCLP	3000	UG/L	10	U	10	U	10	U	10	U	10	U
98-95-3	Nitrobenzene	SW8270C-TCLP	2000	UG/L	10	U	10	U	10	U	10	U	10	U
87-68-3	Hexachlorobutadiene	SW8270C-TCLP	500	UG/L	10	U	10	U	10	U	10	U	10	U
88-06-2	2,4,6-Trichlorophenol	SW8270C-TCLP	200	UG/L	10	U	10	U	10	U	10	U	1	J
95-95-4	2,4,5-Trichlorophenol	SW8270C-TCLP	400,000	UG/L	20	U	20	U	20	U	20	U	1	J
121-14-2	2,4-Dinitrotoluene	SW8270C-TCLP	130	UG/L	10	U	10	U	10	U	10	U	1	J
118-74-1	Hexachlorobenzene	SW8270C-TCLP	130	UG/L	10	U	10	U	10	U	10	U	10	U
87-86-5	Pentachlorophenol	SW8270C-TCLP	100,000	UG/L	20	U	20	U	20	U	20	U	20	U
110-86-1	Pyridine	SW8270C-TCLP	5000	UG/L	10	U	10	U	10	U	10	U	27	

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liters
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
J - Estimated concentration

Summary Table of Analytical Data

Metals - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A SF-2004-B01A Sediment 4/21/04		SF-2004-B02 SF-2004-B02 Sediment 4/20/2004		SF-2004-B03 SF-2004-B03 Sediment 4/20/2004		SF-2004-B04 SF-2004-B04 Sediment 4/21/04		SF-2004-B05 SF-2004-B05 Sediment 4/21/04		SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/04	
7440-38-2	Arsenic	SW6010B-TCLP	5000	ug/L	20.6		24.5		36.4		38.6		25.7		26	
7440-39-3	Barium	SW6010B-TCLP	100,000	ug/L	747	E	792	E	595	E	724	E	644	E	713	E
7440-43-9	Cadmium	SW6010B-TCLP	1000	ug/L	4.2	B	4	B	3.7	B	5.3		3.8	B	4.1	B
7440-47-3	Chromium	SW6010B-TCLP	5000	ug/L	75.1		89.5		17.7	B	28.3		44.1		62.8	
7439-92-1	Lead	SW6010B-TCLP	5,000	ug/L	7.4	B	44.2		75.2		55.4		29.4		26.8	
7439-97-6	Mercury	SW7471A-TCLP	200	ug/L	0.14	U	0.14	U	0.17	B	0.14	U	0.14	U	0.14	U
7782-49-2	Selenium	SW6010B-TCLP	1000	ug/L	9	U	9	U	9	U	12.4	B	9	U	9	U
7440-22-4	Silver	SW6010B-TCLP	5000	ug/L	16.8	B	17	B	15.7	B	20	B	16.9	B	17.7	B

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
ug/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
E - estimated because of the presence of interference
B - reported value is less than reporting limit, but greater than instrument detection limit

Summary Table of Analytical Data

Metals - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B06 SF-2004-B06 Sediment		SF-2004-B07 SF-2004-B07 Sediment		SF-2004-B08 SF-2004-B08 Sediment		SF-2004-B09 SF-2004-B09 Sediment	
7440-38-2	Arsenic	SW6010B-TCLP	5000	ug/L	31.3		26.8		21.2		53.3	
7440-39-3	Barium	SW6010B-TCLP	100,000	ug/L	866	E	722	E	619	E	944	E
7440-43-9	Cadmium	SW6010B-TCLP	1000	ug/L	8.8		3.5	B	2.9	B	5.1	
7440-47-3	Chromium	SW6010B-TCLP	5000	ug/L	126		22.7		10.2	B	17.6	B
7439-92-1	Lead	SW6010B-TCLP	5,000	ug/L	26.1		154		50.3		64.9	
7439-97-6	Mercury	SW7471A-TCLP	200	ug/L	0.14	U	0.13	U	0.15	B	0.13	U
7782-49-2	Selenium	SW6010B-TCLP	1000	ug/L	12	B	9	U	9	U	9	U
7440-22-4	Silver	SW6010B-TCLP	5000	ug/L	30.5		16.6	B	13	B	21.4	B

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
ug/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
E - estimated because of the presence of interference
B - reported value is less than reporting limit, but greater than instrument detection limi

Summary Table of Analytical Data

Metals - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B10 SF-2004-B10 Sediment		SF-2004-B11 SF-2004-B11 Sediment		SF-2004-B12 SF-2004-B12 Sediment		SF-2004-B13 SF-2004-B13 Sediment	
7440-38-2	Arsenic	SW6010B-TCLP	5000	ug/L	24.6		11.6	B	32.3		9.7	B
7440-39-3	Barium	SW6010B-TCLP	100,000	ug/L	886	E	608	E	748	E	649	E
7440-43-9	Cadmium	SW6010B-TCLP	1000	ug/L	2.9	B	2.7	B	3.6	B	2.5	B
7440-47-3	Chromium	SW6010B-TCLP	5000	ug/L	14.8	B	23.9		20.7		16.8	B
7439-92-1	Lead	SW6010B-TCLP	5,000	ug/L	91.1		4	U	97.3		62.2	
7439-97-6	Mercury	SW7471A-TCLP	200	ug/L	0.14	U	0.15	U	0.22	B	0.15	U
7782-49-2	Selenium	SW6010B-TCLP	1000	ug/L	9	U	9	U	9	U	9	U
7440-22-4	Silver	SW6010B-TCLP	5000	ug/L	11.5	B	11.8	B	16.9	B	10.5	B

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
ug/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)
E - estimated because of the presence of interference
B - reported value is less than reporting limit, but greater than instrument detection limit

Summary Table of Analytical Data

Herbicides - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B01A SF-2004-B01A Sediment 4/21/2004		SF-2004-B02 SF-2004-B02 Sediment 4/20/2004		SF-2004-B03 SF-2004-B03 Sediment 4/20/2004		SF-2004-B04 SF-2004-B04 Sediment 4/21/2004	
(Group Code)	**(Group Description)**											
Herbicides												
94-75-7	2,4-D (Dichlorophenoxyacetic Acid)	SW8151A-TCLP	10,000	ug/L	1	U	1	U	1	U	1	U
93-72-1	Silvex (2,4,5-TP)	SW8151A-TCLP	1000	ug/L	0.1	U	0.1	U	0.1	U	0.1	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
ug/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)

Summary Table of Analytical Data

Herbicides - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B05 SF-2004-B05 Sediment 4/21/2004		SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/2004		SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004	
(Group Code)	**(Group Description)**											
Herbicides												
94-75-7	2,4-D (Dichlorophenoxyacetic Acid)	SW8151A-TCLP	10,000	ug/L	1	U	1	U	1	U	1	U
93-72-1	Silvex (2,4,5-TP)	SW8151A-TCLP	1000	ug/L	0.1	U	0.1	U	0.1	U	0.1	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
ug/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)

Summary Table of Analytical Data

Herbicides - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B08 SF-2004-B08 Sediment 4/21/2004		SF-2004-B09 SF-2004-B09 Sediment 4/21/2004		SF-2004-B10 SF-2004-B10 Sediment 4/22/2004	
(Group Code)	**(Group Description)**									
Herbicides										
94-75-7	2,4-D (Dichlorophenoxyacetic Acid)	SW8151A-TCLP	10,000	ug/L	1	U	1	U	1	U
93-72-1	Silvex (2,4,5-TP)	SW8151A-TCLP	1000	ug/L	0.1	U	0.1	U	0.1	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
ug/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)

Summary Table of Analytical Data

Herbicides - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004	
(Group Code)	**(Group Description)**									
Herbicides										
94-75-7	2,4-D (Dichlorophenoxyacetic Acid)	SW8151A-TCLP	10,000	ug/L	1	U	1	U	1	U
93-72-1	Silvex (2,4,5-TP)	SW8151A-TCLP	1000	ug/L	0.1	U	0.1	U	0.1	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
ug/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)

Summary Table of Analytical Data

Pesticides - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B01A SF-2004-B01A Sediment 4/21/2004	SF-2004-B02 SF-2004-B02 Sediment 4/20/2004	SF-2004-B03 SF-2004-B03 Sediment 4/20/2004	SF-2004-B04 SF-2004-B04 Sediment 4/21/2004	SF-2004-B05 SF-2004-B05 Sediment 4/21/2004
(Group Code)	**(Group Description)**								
pesticides									
58-89-9	gamma-BHC (Lindane)	SW8081A	400	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
76-44-8	Heptachlor	SW8081A	8	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1024-57-3	Heptachlor epoxide	SW8081A	8	UG/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
72-20-8	Endrin	SW8081A	20	UG/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
72-43-5	Methoxychlor	SW8081A	10,000	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
8001-35-2	Toxaphene	SW8081A	500	UG/L	5 U	5 U	5 U	5 U	5 U
12789-03-6	Chlordane	SW8081A	30	UG/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)

Summary Table of Analytical Data

Pesticides - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-D05 SF-2004-D05 Sed. (Duplicate) 4/21/2004		SF-2004-B06 SF-2004-B06 Sediment 4/21/2004		SF-2004-B07 SF-2004-B07 Sediment 4/21/2004		SF-2004-B08 SF-2004-B08 Sediment 4/21/2004		SF-2004-B09 SF-2004-B09 Sediment 4/21/2004	
(Group Code)	**(Group Description)**													
pesticides														
58-89-9	gamma-BHC (Lindane)	SW8081A	400	UG/L	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	SW8081A	8	UG/L	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	SW8081A	8	UG/L	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
72-20-8	Endrin	SW8081A	20	UG/L	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	SW8081A	10,000	UG/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
8001-35-2	Toxaphene	SW8081A	500	UG/L	5	U	5	U	5	U	5	U	5	U
12789-03-6	Chlordane	SW8081A	30	UG/L	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)

Summary Table of Analytical Data

Pesticides - TCLP

South Fork/South Branch Chicago River, April 20-22, 2004

CAS Rn	Chemical Name	Analytic Method	TCLP-Regs	Sample Code Location Sample Matrix Unit Date:	SF-2004-B10 SF-2004-B10 Sediment 4/22/2004		SF-2004-B11 SF-2004-B11 Sediment 4/22/2004		SF-2004-B12 SF-2004-B12 Sediment 4/22/2004		SF-2004-B13 SF-2004-B13 Sediment 4/22/2004	
(Group Code)	**(Group Description)**											
pesticides												
58-89-9	gamma-BHC (Lindane)	SW8081A	400	UG/L	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	SW8081A	8	UG/L	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	SW8081A	8	UG/L	0.05	U	0.05	U	0.05	U	0.05	U
72-20-8	Endrin	SW8081A	20	UG/L	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	SW8081A	10,000	UG/L	0.5	U	0.5	U	0.5	U	0.5	U
8001-35-2	Toxaphene	SW8081A	500	UG/L	5	U	5	U	5	U	5	U
12789-03-6	Chlordane	SW8081A	30	UG/L	2.5	U	2.5	U	2.5	U	2.5	U

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
UG/L = micrograms per liter
TCLP = Toxicity Characteristic Leachate Procedure

Data Qualifiers:
U - Compound was analyzed for but not detected (Undetected)

Summary of Analytical Data

Geotechnical Analysis

South Fork/South Branch Chicago River, April 20-22, 2004

Parameter Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B01A / SF-2004-B01A / Sediment / 4/21/2004	SF-2004-B02 / SF-2004-B02 / Sediment / 4/20/2004	SF-2004-B03 / SF-2004-B03 / Sediment / 4/20/2004	SF-2004-B04 / SF-2004-B04 / Sediment / 4/21/2004	SF-2004-B05 / SF-2004-B05 / Sediment / 4/21/2004	SF-2004-D05 / SF-2004-D05 / Sed. (Duplicate) / 4/21/2004	SF-2004-B06 / SF-2004-B06 / Sediment / 4/21/2004
(Group Description) Geotechnical									
Grainsize (Gravel) [a]	ASTM Method D422	%	2.3	1.1	0	1	18.4	8.5	41.2
Grainsize (Sand) [a]	ASTM Method D422	%	32.5	16.7	19.9	8.9	23.3	27.4	43.2
Grainsize (Silt) [a]	ASTM Method D422	%	35.5	50.3	47.9	53.1	36.2	39	10.7
Grainsize (Clay) [a]	ASTM Method D422	%	29.7	32	32.3	37	22.1	25.1	4.9
Specific Gravity	ASTM Method D854		1.73	1.44	1.84	1.37	1.88	1.87	2.5
% Total Solids	reported by chemical laboratory	%	46	36	43	52	49	33	77
% Total Solids	reported by geotechnical laboratory on subsample	%	49.7	58.1	45.2	60	49.2	50.6	72.9

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
[a] See Appendix F for particle size breakdown

Summary of Analytical Data

Geotechnical Analysis

South Fork/South Branch Chicago River, April 20-22, 2004

Parameter Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-B07 SF-2004-B07 Sediment 4/21/2004	SF-2004-B08 SF-2004-B08 Sediment 4/21/2004	SF-2004-B09 SF-2004-B09 Sediment 4/21/2004	SF-2004-B10 SF-2004-B10 Sediment 4/22/2004	SF-2004-B11 SF-2004-B11 Sediment 4/22/2004	SF-2004-B12 SF-2004-B12 Sediment 4/22/2004	SF-2004-B13 SF-2004-B13 Sediment 4/22/2004
(Group Description) Geotechnical									
Grainsize (Gravel) [a]	ASTM Method D422	%	6	0.7	0	2	4.4	0	16.9
Grainsize (Sand) [a]	ASTM Method D422	%	25.5	54.4	28.8	59.8	88.6	33.7	79.6
Grainsize (Silt) [a]	ASTM Method D422	%	40.2	30.6	44.4	22.3	2.3	44.9	0.1
Grainsize (Clay) [a]	ASTM Method D422	%	28.3	14.2	26.8	15.8	4.8	21.4	3.4
Specific Gravity	ASTM Method D854		2.1	2.27	1.84	2.07	2.5	2.16	2.55
% Total Solids	reported by chemical laboratory	%	48	48	41	47	58	41	79
% Total Solids	geotechnical laboratory on subsample	%	47	54.6	45.4	48.3	70.2	48.5	78

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
[a] See Appendix F for particle size breakdown

Summary of Analytical Data

Geotechnical Analysis

South Fork/South Branch Chicago River, April 20-22, 2004

Parameter Name	Analytic Method	Sample Code / Location / Sample Matrix / Unit / Date:	SF-2004-G01 SF-2004-G01 Sediment 4/20/2004	SF-2004-G02 SF-2004-G02 Sediment 4/20/2004	SF-2004-G03 SF-2004-G03 Sediment 4/21/2004	SF-2004-G04 SF-2004-G04 Sediment 4/21/2004	SF-2004-G05 SF-2004-G05 Sediment 4/22/2004
(Group Description)							
Geotechnical							
Grainsize (Gravel) [a]	ASTM Method D422	%	2.4	0.3	0	0	0
Grainsize (Sand) [a]	ASTM Method D422	%	78.5	67.2	86	88.2	95.3
Grainsize (Silt) [a]	ASTM Method D422	%	10	11.9	7.4	4.3	1.8
Grainsize (Clay) [a]	ASTM Method D422	%	9.1	20.6	6.6	7.5	2.9
Specific Gravity	ASTM Method D854		2.34	1.96	2.3	2.53	2.57
% Total Solids	reported by chemical laboratory	%	56	41	62	71	76
% Total Solids	reported by geotechnical laboratory on subsample	%	54.3	43.8	67.7	53.9	76.1

Notes:
B = Boring/Core sample
G = Grab sample
SF = South Fork South Branch Chicago River
[a] See Appendix F for particle size breakdown

Appendix D

Sample Delivery Group (SDG) Narrative

Analytical Data Package for CDM Federal Programs

Client Project: South Fork, South Branch, Chicago River, 6152-006

SDG# C0344

Mitkem Project ID: C0344

May 17, 2004

Prepared For:

CDM Federal Programs
125 S. Wacker Drive
Suite 600
Chicago, IL 60606
Attn: Mr. David Bjostad

Prepared By:

Mitkem Corporation
175 Metro Center Boulevard
Warwick, RI 02886
(401) 732-3400

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to CDM Federal Programs' South Fork, South Branch Chicago River project, number 6152-006. Under this deliverable, analysis results are presented for twenty samples that were received between April 20 and 23, 2004. Analyses were performed per specifications in the project's Scope of Work and the chain of custody forms, and per discussion with the client. The Mitkem Workorder Report is included in the Sample Transmittal Documentation section of the report to cross-reference client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 and other methods and reported in a full CLP-format data deliverable package. Grain size and specific gravity analyses were subcontracted STL Laboratories of Burlington, VT. The entire STL data package is included in the data report. Please note that a portion of the STL data package is printed on both sides of the page.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis (Total):

Surrogate recovery: recoveries were within the QC limits with the exception of elevated recoveries for one or more surrogates due to matrix interference in the following samples: SF-2004-B02, SF-2004-B03, SF-2004-B05, SF-2004-D05, SF-2004-B09, SF-2004-B08, SF-2004-G04, SF-2004-B07, SF-2004-B12 and the MSD analyzed on sample SF-2004-B07. Percent recoveries were within the QC limits for each sample when reanalyzed at dilution, with the exception of SF-2004-G04DL, which continued to have one high percent recovery.

Lab control sample: spike recoveries were within the QC limits with the exception of elevated recoveries for five analytes in the medium-level LCS, V1BLCS. Please note that this medium-level LCS is only associated with the dilution of sample SF-2004-G02, and that none of the compounds with elevated recoveries were detected in this analysis.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SF-2004-B07. Fifty spike recoveries out of 132 were outside of the recovery limits. Two out of 66 replicate RPDs were outside of the QC limits. Please note that percent recoveries for all of these compounds were within the QC limits in the associated laboratory control sample. Per SW-846 Method 8000B, this constitutes matrix interference.

Sample analysis: The following samples were reanalyzed at dilution using smaller sample aliquots: SF-2004-B01, SF-2004-B02, SF-2004-B03, SF-2004-B05, SF-2004-B07, SF-2004-B08, SF-2004-B09, SF-2004-B10, SF-2004-B11, SF-2004-B12, SF-2004-D05 and SF-2004-G04. Sample SF-2004-G02 was reanalyzed using the medium level approach. Sample SF-2004-B03 was reanalyzed at two different dilutions, identified with the suffix DL and DL1. Please note that the final dilution reanalysis occurred beyond the method holding time on May 10, 2004. Internal standard areas were outside of the QC limits in the original analyses of several samples, and in the dilution analyses of a few samples. No other unusual observation was made for the analysis.

3. Volatile Analysis (TCLP)

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SF-2004-B13. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis

4. Semivolatile Analysis (Total, Full-Scan):

Alkanes were determined as part of TIC and are presented in the Alkane Narrative report following the narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of one base/neutral surrogate in samplesSF-2004-B02, SF-2004-G01, SF-2004-G04, SF-2004-B12, one acid and one base/neutral surrogate in samples SF-2004-B11 and SF-2004-G05, and two acid and one base/neutral surrogates in sample SF-2004-B13. Please note that all surrogates were within the QC limits in the dilution analysis of sample SF-2004-B13. Two surrogate standards exceeded the upper QC limits in method blank SBLK2K. Please note that the upper QC limit for these surrogates is less than 100%. Per laboratory policy, these surrogates are acceptable, as upper limits of less than 100% reflect sample matrix effects that are not applicable to method blanks.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of hexachlorocyclopentadiene in both the LCS and its duplicate. Please note that this compound was not detected in any associated sample.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SF-2004-B07. Forty-nine out of 128 spike recoveries, and ten out of 64 replicate RPDs were outside of the QC limits. Please note that percent recoveries for all of these compounds, with the exception of hexachlorocyclopentadiene, were within the QC limits in the associated laboratory control sample. Per SW-846 Method 8000B, this constitutes matrix interference. In addition, the sample, MS and MSD required analysis at 8X dilution. This resulted in the spike concentration being below the low point of the initial calibration, resulting in "J" qualified values for most MS/MSD compounds.

Sample analysis: all samples were initially analyzed without dilution, but due to severe matrix interference from non-target compounds, most undiluted analyses were unusable as internal standards could not be identified. The following samples required analysis at dilution: SF-2004-B07 and its MS/MSD (8X), SF-2004-B09 (5X), SF-2004-B03 (5X), SF-2004-D05 (5X), SF-2004-B01A (5X), SF-2004-B04 (5X), SF-2004-G03 (8X), SF-2004-B06 (10X), SF-2004-B10 (8X), SF-2004-B05 (5X) and SF-2004-B08 (5X). The following samples were reanalyzed at dilution, or at greater dilution: SF-2004-B02, SF-2004-B11, SF-2004-B12, SF-2004-B13, SF-2004-G12 and SF-2004-G12. Due to matrix interferences, some of the PAH compounds, particularly isomeric pairs, could not be properly quantified in the initial analyses of samples SF-2004-B11, SF-2004-B12 and SF-2004-B13. The dilution reanalyses for these samples contain the more reliable PAH results. Due to sample matrix interference, all tentatively identified compounds could not be properly quantified in the undiluted analysis of sample SF-2004-B12 due to masking of their associated internal standard. No other unusual observation was made for the analyses.

5. Semivolatile Analysis (Total, PAH-SIM):

To achieve lower reporting limits, polynuclear aromatic hydrocarbon (PAH) compounds were analyzed by Method 8270 operating in the selected ion monitoring (SIM) mode. Following the analysis of these samples by conventional full-scan Method 8270, and per discussion with the client, a portion of the original sample extract was analyzed by PAH-SIM.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits in the LCS and duplicate LCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SF-2004-B07. Most spike percent recoveries and replicate RPDs were outside of the QC limits due to the relatively low spike concentrations compared to the significantly greater concentrations of these compounds native to the unspiked sample. In addition, the sample, MS and MSD all required analysis at a 10X dilution.

Sample analysis: all samples were analyzed at 10X dilution. The concentrations of several compounds exceeded the upper calibration range of the instrument. As these compounds are quantified within the calibration range of the conventional full-scan Method 8270 analysis, further dilution was not performed. Only sample SF-2004-B13 was reanalyzed by SIM at greater dilution to insure all compounds were quantified within the calibration range of either the PAH-SIM or full-scan analysis. No other unusual observation was made for the analyses.

6. Semivolatile Analysis (TCLP):

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SF-2004-B07. All compounds were recovered within the QC limits with the exception of pyridine, which was not recovered in the MS.

Sample analysis: no other unusual observation was made for the analyses.

7. Pesticides Analysis (TCLP):

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SF-2004-B07. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

8. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of elevated recovery for decachlorobiphenylo in several samples due to coeluting interferences.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SF-2004-B07. Spike recovery and replicate RPD could not be accurately determined due to interference from the relatively high concentrations of aroclor 1248 and aroclor 1260 native to the unspiked sample. In addition, this sample, MS and MSD required analysis at a 10X dilution.

Sample analysis: the following samples were analyzed at dilution: SF-2004-B02 (5X) and SF-2004-B03, SF-2004-B04, SF-2004-B05, SF-2004-B07 and its MS/MSD, SF-2004-B08, SF-2004-B09, SF-2004-B10 and SF-2004-B12 (all at 10X). No other unusual observation was made for the analysis.

9. Herbicides Analysis (TCLP):

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SF-2004-B07. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

10. Metals/Cyanide Analysis (Total):

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike analysis was performed on sample SF-2004-B07. Spike recoveries were within the QC limits with the exception of chromium and cyanide. These analytes are flagged with an "N" on the data report forms. A post digest spike was performed with improved recovery, indicating matrix interference.

Matrix duplicate: matrix duplicate was performed on sample SF-2004-B07. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analyses.

11. Metals Analysis (TCLP):

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike analysis was performed on sample SF-2004-B07. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample SF-2004-B07. Replicate RPDs were within the QC limits.

Matrix spike: matrix spike was performed on sample BPGW2 for the aqueous samples

Sample analysis: the ICP serial dilution analysis performed on sample SF-2004-B07 was outside of the QC limits for barium. Barium results in the TCLP analyses are qualified with the "E" flag. No other unusual observation was made for the analyses.

12. Wet Chemistry Analyses:

Samples were analyzed for total volatile solids, total phosphorous, total organic carbon, ammonia, chemical oxygen demand, flashpoint, reactive cyanide, reactive sulfide, hexavalent chromium, pH, paint filter liquids and oil & grease. Several analyses were modified to address the soil/sediment sample matrix. Chemical oxygen demand was performed on a DI water leacheate of the sample, prepared using the ASTM procedure. Results are reported on a dry-weight corrected basis. Oil & grease results are reported on a separate sheet to allow for proper calculation of results.

Lab control sample: spike recoveries were within the QC limits for all analyses.

Matrix spike: matrix spike analyses were performed where appropriate. Percent recoveries were within the QC limits with the exception of total phosphorous and ammonia. Please note that the QC limits for these analyses apply to aqueous samples only, and are considered advisory for soil/sediment samples.

Matrix duplicate: matrix duplicate analyses were performed where appropriate. Replicate RPDs were within the QC limits with the exception of total phosphorous. A second duplicate analysis was performed with RPD again exceeding the QC limits. This is likely due to lack of homogeneity of the sample or matrix interference.

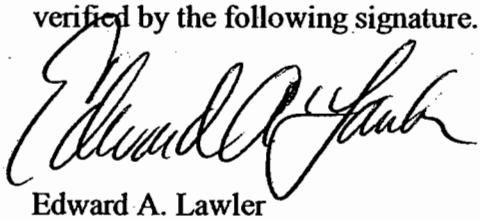
Sample analysis: the method blank for total volatile solids contained a detected value exceeding the reporting limit at 2.9 wt%. Sample results are qualified with the "B" flag to indicate potential low level contamination. The concentration of total organic carbon in several samples exceeded the upper range of the instrument. Dilution analyses are not performed for total organic carbon in soil, as the soil is analyzed directly. Results for these samples are reported using the ">" symbol. No other unusual observation was made for the analyses.

13. Subcontracted Analyses:

Grain size and specific gravity analyses were subcontracted STL Laboratories of Burlington, VT. The entire STL data package, including any notes on the analyses, is included in the data report. Please note that the STL data package is printed on both sides of the page.

All pages in this report have been numbered consecutively, starting with the title page and ending with a page saying only "Last Page of Data Report". The STL data package is paginated separately, following the Last Page of Data Report sheet.

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.



Edward A. Lawler
Laboratory Operations Manager
04/23/04

ALKANE NARRATIVE REPORT
Report date : 05/07/2004
SDG: C0344

Client Sample ID: SF-2004-G01 Lab Sample ID: C0344-04B File ID: S2E006

Compound	RT	Est. Conc.	Q
Branched Alkane	8.80	1600	J

Client Sample ID: SF-2004-G02 Lab Sample ID: C0344-05B File ID: S2E006

Compound	RT	Est. Conc.	Q
Branched Alkane	6.66	1900	J
Branched Alkane	7.21	2600	J
Branched Alkane	8.11	6700	J
Straight-chain Alkane	8.81	9000	J
Branched Alkane	10.64	34000	J
Straight-chain Alkane	16.31	860	J
Straight-chain Alkane	17.21	1200	J

Client Sample ID: SF-2004-G04 Lab Sample ID: C0344-14B File ID: S2E007

Compound	RT	Est. Conc.	Q
Branched Alkane	7.28	790	J
Branched Alkane	10.31	880	J
Branched Alkane	10.71	2100	J

Client Sample ID: SF-2004-B13 Lab Sample ID: C0344-16C File ID: S2E008

Compound	RT	Est. Conc.	Q
Branched Alkane	10.34	3500	J
Branched Alkane	10.75	4600	J

Client Sample ID: SF-2004-B12 Lab Sample ID: C0344-17C File ID: S2E008

Compound	RT	Est. Conc.	Q
Branched Alkane	6.80	3200	J
Branched Alkane	7.36	3600	J
Straight-chain Alkane	10.42	17000	J
Branched Alkane	10.83	22000	J
Straight-chain Alkane	11.53	16000	J

Client Sample ID: SF-2004-B11 Lab Sample ID: C0344-18C File ID: S2E008

Compound	RT	Est. Conc.	Q
Branched Alkane	10.37	0.0	
Branched Alkane	10.78	0.0	
Branched Alkane	11.53	0.0	

Client Sample ID: SF-2004-G05 Lab Sample ID: C0344-19B File ID: S2E008

Compound	RT	Est. Conc.	Q

Straight-chain Alkane	10.33	1300	J
Straight-chain Alkane	13.15	880	J

Client Sample ID: SF-2004-B13DL Lab Sample ID: C0344-16CDL File ID: S3

Compound	RT	Est. Conc.	Q
Branched Alkane	10.77	7300	JD

Client Sample ID: SF-2004-B11DL Lab Sample ID: C0344-18CDL File ID: S3

Compound	RT	Est. Conc.	Q
Branched Alkane	8.71	5000	JD
Branched Alkane	10.77	16000	JD
Straight-chain Alkane	11.35	7800	JD

Client Sample ID: SF-2004-B09 Lab Sample ID: C0344-09C File ID: S3C834

Compound	RT	Est. Conc.	Q
Branched Alkane	7.97	52000	J
Branched Alkane	8.72	24000	J
Branched Alkane	9.29	31000	J
Branched Alkane	10.78	190000	J
Branched Alkane	11.36	140000	J

Client Sample ID: SF-2004-G02DL Lab Sample ID: C0344-05BDL File ID: S3

Compound	RT	Est. Conc.	Q
Branched Alkane	7.97	7100	JD
Branched Alkane	9.28	3100	JD
Branched Alkane	11.35	5300	JD

Client Sample ID: SF-2004-B12DL Lab Sample ID: C0344-17CDL File ID: S3

Compound	RT	Est. Conc.	Q
Branched Alkane	7.97	22000	JD
Branched Alkane	8.72	11000	JD
Branched Alkane	10.78	72000	JD
Branched Alkane	11.36	55000	JD

Client Sample ID: SF-2004-G01DL Lab Sample ID: C0344-04BDL File ID: S3

Compound	RT	Est. Conc.	Q
Branched Alkane	7.97	2200	JD
Straight-chain Alkane	10.44	1600	JD
Branched Alkane	11.35	2900	JD

Client Sample ID: SF-2004-B03 Lab Sample ID: C0344-03C File ID: S3C835

Compound	RT	Est. Conc.	Q
Branched Alkane	8.72	17000	J
Branched Alkane	10.78	93000	J
Straight-chain Alkane	11.80	18000	J

Client Sample ID: SF-2004-D05 Lab Sample ID: C0344-07C File ID: S3C835

Compound	RT	Est. Conc.	Q
Branched Alkane	7.98	46000	J
Branched Alkane	8.72	25000	J
Branched Alkane	10.79	210000	J
Branched Alkane	11.37	140000	J

Client Sample ID: SF-2004-B01A Lab Sample ID: C0344-08C File ID: S3C83

Compound	RT	Est. Conc.	Q
Branched Alkane	7.97	16000	J
Branched Alkane	8.72	14000	J
Branched Alkane	10.78	46000	J
Branched Alkane	11.36	30000	J

Client Sample ID: SF-2004-B04 Lab Sample ID: C0344-10C File ID: S3C835

Compound	RT	Est. Conc.	Q
Branched Alkane	7.97	38000	J
Branched Alkane	8.72	30000	J
Branched Alkane	10.79	150000	J
Branched Alkane	11.36	120000	J

Client Sample ID: SF-2004-G03 Lab Sample ID: C0344-11B File ID: S3C835

Compound	RT	Est. Conc.	Q
Branched Alkane	7.92	7400	J
Branched Alkane	8.71	12000	J
Branched Alkane	9.28	16000	J
Branched Alkane	10.78	46000	J
Branched Alkane	11.36	33000	J

Client Sample ID: SF-2004-B06 Lab Sample ID: C0344-13C File ID: S3C835

Compound	RT	Est. Conc.	Q
Branched Alkane	7.15	8100	J
Branched Alkane	7.97	23000	J
Branched Alkane	8.72	16000	J
Branched Alkane	10.78	55000	J
Branched Alkane	11.36	39000	J

Client Sample ID: SF-2004-B10 Lab Sample ID: C0344-20C File ID: S3C835

Compound	RT	Est. Conc.	Q
Branched Alkane	8.72	13000	J
Branched Alkane	9.28	15000	J
Branched Alkane	10.78	33000	J
Branched Alkane	11.36	23000	J

Client Sample ID: SF-2004-B08 Lab Sample ID: C0344-12C File ID: S3C837

Compound	RT	Est. Conc.	Q
Branched Alkane	7.93	16000	J
Branched Alkane	8.67	16000	J
Branched Alkane	10.74	63000	J
Branched Alkane	11.31	43000	J

Appendix E

USACE Data Quality Analysis

CELRC-TS-HE 2 July 2004

MEMORANDUM FOR RECORD

SUBJECT: Data quality analysis (DQA) for samples collected from the South Fork of the South Branch (SFSB) of the Chicago River, Chicago Illinois, 20-22 April 2004.

1. The U.S. Army Corps of Engineers (USACE), Chicago District, and the City of Chicago are investigating alternatives for the restoration of the South Fork, South Branch of the Chicago River (SFSB), and the primary objective of the data collection was to determine if the sediment in the SFSB exceeded TCLP or other hazardous waste criteria.

2. CDM collected the samples, and the CDM point of contact (POC) is David Bjostad phone (312) 251-8003, 125 South Wacker Drive, Suite 600, Chicago, Illinois 60606. The samples were collected under Contract Number DACW23-02-D-0003, Work Order Number 0003. Mitkem Corporation, 175 Metro Center Boulevard, Warwick, RI 02886, phone (401) 732-3400, performed the laboratory analyses (Project Number 6152-006) (U.S. Army Corps Validated Laboratory).

3. The following twenty sediment samples (fifteen core, one of which was a field duplicate, and five grab samples) were collected on 20-22 April 2004:

Table 1. Sample Information

Sample ID	Matrix	Sample Type
SF-2004-B01[1]	Sediment	Core
SF-2004-B01A	Sediment	Core
SF-2004-B02	Sediment	Core
SF-2004-B03	Sediment	Core
SF-2004-B04	Sediment	Core
SF-2004-B05	Sediment	Core
SF-2004-D05	Sediment	Field Duplicate
SF-2004-B06	Sediment	Core
SF-2004-B07	Sediment	Core
SF-2004-B08	Sediment	Core
SF-2004-B09	Sediment	Core
SF-2004-B10	Sediment	Core
SF-2004-B11	Sediment	Core
SF-2004-B12	Sediment	Core
SF-2004-B13	Sediment	Core
SF-2004-G01	Sediment	Grab
SF-2004-G02	Sediment	Grab
SF-2004-G03	Sediment	Grab
SF-2004-G04	Sediment	Grab
SF-2004-G05	Sediment	Grab

[1] Sample not analyzed. Was re-sampled as SF-2004-B01A

The core samples were analyzed for bulk chemistry and TCLP/hazardous waste analyses (Tables 2 and 3) and grab samples were analyzed for bulk chemistry only (Table 2). The methods employed, the required detection limits, and holding times are listed in each table.

Table 2: List of Parameters for Sediment Bulk Chemistry.

Parameter	Test Method(s) Employed	Req. Detect. Limit / Req. Holding Time
Arsenic	6010B	1.0 / 180 days
Barium	6010B	5.0 / 180 days
Cadmium	6010B	1.0 / 180 days
Chromium (Total and Hexavalent)	6010B For Total and 7196* For Hexavalent Chromium	1.0 / Digestion 30 days – Analysis within 96 hours (QAP – SW 846)
Copper	6010B	2.5 / 180 days
Lead	6010B	5.0 / 180 days
Mercury	7471A	0.02 / 28days
Nickel	6010B	5.0 / 180 days
Selenium	6010B	1.0 / 180 days
Silver	6010B	5.0 / 180 days
Zinc	6010B	2.0 / 180 days
Cyanide, Total	9012B*	25.0 / 14 days
Total Phosphorus	365.2	5.0 / NA[1]
Oil and Grease	1664	NA
Ammonia Nitrogen N as NH_3	Standard Method 4500*	1.0 / 28 days
Chemical Oxygen Demand	Standard Method 5220*	200 / NA
Total Organic Carbon	415.1*	500 / 28 days
Semivolatiles (except PAHs)	8270C	Varies / 14 days to Extraction – 40 days to Analysis
PNAs[2]	8270 – SIM[2]	Varies / 14 days to Extraction – 40 days to Analysis
PCBs	8082	Varies / 14 days to Extraction – 40 days to Analysis
Volatiles	8260B	Varies / 14 days
% Volatile Solids	160.4	NA / 7 days
% Total Solids	Laboratory SOP*	NA / 7days
Particle Size With Hydrometer	ASTM D422	NA / NA
Specific Gravity by Water Pycnometer	ASTM D854	NA / NA

[1] NA = Not Applicable, [2]PNA = Polynuclear Aromatic Hydrocarbon, SIM = Selective Ion Monitoring.
[3] SOP = Standard Operating Procedure for percent solids – Method 160.3 was listed in the CDM Sampling Plan, but it is mainly designed for aqueous samples
*Method Differed From Method In Scope of Work and CDM Sampling Plan

Table 3. List of TCLP and Hazardous Waste Parameters

Parameter	Test Method(s) Employed	Req. Detect. Limit/Holding Time
TCLP[1] RCRA Metals	TCLP – 6010B (TCLP – 7471A – For Mercury)	Varies / 14 days to Extraction – 40 days to Analysis
TCLP Volatiles	TCLP – 8260B	Varies / 14 days to Extraction – 40 days to Analysis
TCLP Semivolatiles	TCLP – 8270C	Varies / 14 days to Extraction – 40 days to Analysis
TCLP Herbicides	TCLP – 8151A	Varies / 14 days to Extraction – 40 days to Analysis
TCLP Pesticides	TCLP – 8081A	Varies / 14 days to Extraction – 40 days to Analysis
Flash Point	1010	NA[2] / 24 hours
Soil and Waste pH	9045	Within 0.1 STD units / 24 hours
Reactive Cyanide	HCN (SW846 Ch 7.3.3.2)	< 250 mg HCN/kg / 24 hours
Reactive Sulfide	H2S (SW846 Ch 7.3.4.2)	< 500 mg H_2S/kg / 24 hours
Paint Filter	9095	NA / NA

[1]TCLP = Toxicity characteristic leaching procedure
[2]NA = Not Applicable
Per USACE, Chicago District, instructions, the Flash Point, Reactive Cyanide, Reactive Sulfide and Paint Filter tests were not performed on the field duplicate (SF-2004-D05)

4. Per the Chain of Custody, the temperature requirement was met. The samples were shipped in four coolers, and all four of the coolers were received at the laboratory at a temperature range of 4 ± 2 °C.

5. The laboratory data was submitted as an Electronic Data Deliverable (EDD) on CD and was received at the USACE, Chicago District, on 27 May 2004. A printed copy of the main data set (around 600 pages) was also provided. The full data package contains five pdf files containing approximately 5500 pages of data, not including the summary tables, which were provided in Excel files. Due to limited resources and the large amount of data, this review does not provide an in-depth evaluation of the methods and calibration procedures, but it does provide a summary of the completeness, representativeness, and sensitivity of the data.

6. The samples were analyzed for the parameters shown in Tables 2 and 3, and most of the test methods employed by the laboratory corresponded to the ones provided in the Scope of Work (SOW) and CDM Sampling Plan, except for the following methods: Hexavalent chromium, total cyanide, ammonia nitrogen, chemical oxygen demand, % total solids and total organic carbon. After correspondence with CDM and the laboratory (see CDM Response), the methods in the CDM Sampling Plan were determined to be in error, because they were designed for aqueous samples. Consequently, the laboratory employed the corresponding methods that were designed for sediment sample analysis.

7. According to the CDM Sampling Plan, there was a 1 day (24-hour) holding time for each of the following tests: Flash Point, Soil and Waste pH, Reactive Cyanide, and Reactive Sulfide, and Table 4 shows the samples and corresponding tests where this holding time was exceeded. After

correspondence with CDM and the laboratory (see CDM Response), the data were deemed to be useable if they were qualified as estimated.

Table 4. Samples With Holding Time Exceedances*

Sample Name	Flash Point Holding Time [days]	Soil and Waste pH Holding Time [days]	Reactive Cyanide Holding Time [days]	Reactive Sulfide Holding Time [days]
SF-2004-B02	**1**	**1**	**2**	**1**
SF-2004-B03	**1**	**1**	**2**	**1**
SF-2004-D05	NA	< 1	NA	NA
SF-2004-B06	**5**	< 1	**15**	**14**
SF-2004-B07	**6**	< 1	**15**	**14**
SF-2004-B08	**5**	< 1	**15**	**14**
SF-2004-B10	**6**	**4**	**14**	**13**
SF-2004-B11	**5**	**4**	**14**	**13**
SF-2004-B12	**5**	**4**	**14**	**13**
SF-2004-B13	**6**	**4**	**14**	**13**

*Numbers in bold indicate the tests and actual holding times, which exceeded the 1-day holding time. NA = Not Applicable (Tests were not required for this sample)

8. Due to high analyte concentrations and matrix interference, dilutions were commonly performed during the VOC analyses and smaller sample aliquots were used. The final dilution for Sample SF-2004-B03 was analyzed on 10 May 2004, and, as acknowledged in the narrative statement, this final analysis exceeded the holding time.

9. In the SOW, the required detection limits of some chemical compounds are reported to vary according to the particular compound, and these required detection limits were subject to Corps approval. Consequently, the required detection limits were based on the CDM Sampling Plan, which was subsequently approved by the Corps. The actual detection limits were not specifically reported with the tests results, but the method blanks indicate that the instruments were capable of meeting the required detection limits. Nevertheless, the dilution factors and the presence of non-detected compounds above the required detection limit indicate that the actual detection limits exceeded the required detection limit for several test methods. The following test methods had issues concerning the required detection limit:
   a. Volatiles: Based a review of the non-detected compounds in the largest sample aliquot (non-diluted sample), the required detection limits were only met for a few volatile compounds in a few samples, and, generally, the detection limits were not met for the majority of the volatile compounds in any of the samples. Nevertheless, the non-detected compounds in the samples were commonly within 20 parts per billion (pbb) of the required detection limit.
   b. Semi-Volatiles: Based a review of the non-detected compounds in the largest sample aliquot (non-diluted sample), the required detection limits were only met for a few semi-volatile compounds in a few samples, and, generally, the detection limits were not met for the majority of the semi-

volatile compounds in any of the samples. The actual detection limit was often ten times the required detection limit due to sample dilution. The narrative mentions that there was severe matrix interference from non-target compounds and most non-diluted samples were not useable because internal standards could not be identified.

c. PNAs: All the PNA compounds in the PNA-SIM analysis were detected in all the samples, and high concentrations that exceeded the calibration range were common. Therefore, it is difficult to ascertain the actual detection limit. The narrative notes that all the samples were analyzed at ten times dilution. It should be noted that PNAs were also analyzed with the semi-volatile compounds, and they were commonly identified at a secondary dilution factor. Therefore, the PNA results from the semi-volatile analysis should be used to determine compound concentrations that exceeded the calibration range in the PNA-SIM analysis.
d. PCBs: The required detection limits were not met due to samples that were analyzed at dilution.

After correspondence with CDM and the laboratory (see CDM Response), it was determined that elevated percent moisture in the sediment samples was the primary cause of the elevated reporting limits, since reporting limits are adjusted to a dry weight basis.

10. Method blanks were run at the required frequency for all the test methods. A quantifiable concentration that exceeded the reporting limit was only reported for total volatile solids (2.9 wt.%). Field blanks were not run.

11. Matrix Spike (MS) and Matrix Spike Duplicates (MSDs) were run at the required frequency. The following test methods had issues concerning the recovery and quality control (QC) limits:
    a. Volatiles: Fifty spike recoveries of 132 were outside the recovery limits, and two of 66 replicate relative percent differences (RPDs) were outside the QC limits. Problems were attributed to matrix interference.
    b. Semi-Volatiles: Forty-nine out of 128 spike recoveries were outside the recovery limits and 10 of 64 RPDs were outside the QC limits. Due to an eight times dilution, the concentrations of the compounds spiked into the MS/MSD sample were below the initial calibration and had to be estimated. Problems were attributed to matrix interference.
    c. Semi-Volatile TCLP: Pyridine was not recovered in the MS, but 58 % was recovered in the MSD.
    d. PNAs: Most spike recoveries and replicate RPDs were outside the QC limits due to low spike concentrations compared to the high concentrations in the native, non-spiked sample. The sample, MS, and MSD all required analysis at a 10 times dilution.
    e. PCBs: Spike recovery and replicate RPDs could not be determined due to interference from high concentrations of Aroclor 1248 and 1260 in the

native, non-spiked sample. The sample, MS, and MSD all required analysis at a 10 times dilution.

f. Metals and Cyanide: Chromium and cyanide spike recoveries were outside the QC limits. A post-digestion spike was performed with improved recovery, indicating matrix interference.
g. Wet Chemistry: The percent recovery for the MS for total phosphorus was quite lower and the MS for ammonia was slightly lower than the QC limits, but the QC limits apply to aqueous samples and are only advisory for sediment samples.

After correspondence with CDM and the laboratory (see CDM Response), it was determined that matrix spike exceedances were attributed to "sample-related conditions," and not to laboratory QC failures. Some sample recoveries were above the laboratory control limits and some were below, so a clear directional bias was not evident.

12. A field duplicate (SF-2004-D05) was collected and analyzed. Laboratory duplicates were not run. QC limits were not established for the field duplicate in the SOW or CDM Sampling Plan, but substantial differences in parameter concentrations can often be observed when comparing the sample (SF-2004-B05) to the corresponding field duplicate (SF-2004-D05). It is likely that these differences are a result of matrix interference and/or environmental sample heterogeneity.

13. Laboratory controls samples (LCSs) were run at the required frequency, and spike recoveries were within the QC limits except for the following test methods that had issues concerning the LCSs.
    a. Volatiles: Elevated recoveries occurred for five analytes in the medium level LCS, V1BLCS. This LCS was only associated with sample SF-2004-G02, and none of the compounds with elevated recoveries in the LCS were detected in this analysis.
    b. Semi-Volatiles: An elevated recovery of hexachlorocyclopentadiene occurred in both the LCS and the LCS duplicate, but this compound was not detected in any associated sample.

14. Surrogate spikes appeared to be run at the required frequency and with the correct analytes. Following test methods had issues concerning the surrogate recoveries:
    a. Volatiles: One or more surrogate recoveries were elevated for most of the samples, and this was attributed to matrix interference. Percent recoveries were within the QC limits when the samples were diluted and reanalyzed, with the exception of SF-2004-G04DL, which maintained one high percent recovery.
    b. Semi-Volatiles: One surrogate exceeded the QC limits in samples SF-2004-B02, SF-2004-B12, SF-2004-G01, and SF-2004-G04 and two surrogates exceeded the QC limits in samples SF-2004-B11, SF-2004-

B13, and SF-2004-G05. All surrogates were in the QC limits in the dilution analysis of sample SF-2004-B13.

c. PCBs: Elevated recovery of decachlorobiphenyl was observed in several samples, and this was attributed to co-eluting interferences.

15. Corrective action forms were not present in the data package, but most of the deficiencies identified above were reported in the narrative statement submitted with the laboratory data.

16. For the TCLP metals analysis, an inductive coupled plasma (ICP) serial dilution analysis was performed on sample SF-2004-B07, and the result for barium was outside of the QC limits. Consequently, the results for barium were qualified as estimated due to the presence of interference.

According to the SOW, the major objective of the sample collection and analysis effort was to determine if the sediment in the South Fork, South Branch of the Chicago River was hazardous per exceedance of the TCLP and other hazardous waste criteria. The QC analyses for the TCLP tests had a few problems, such as the spiked compound pyridine was not recovered in the MS for the TCLP semi-volatile analysis and barium had to be estimated for the TCLP metals analysis. However, generally, the TCLP data was within the QC limits and the analyte concentrations in the sediment were significantly less than the TCLP regulatory limits. Consequently, the laboratory results appear to be suitable for determining whether the sediment exhibits hazardous toxicity characteristics. The data for determining other hazardous characteristics, notably ignitability, reactivity or corrosivity, are useable but they should be used with caution. Several samples exceeded the holding times provided in the CDM Sampling Plan, but, after correspondence with CDM and the laboratory (see CDM Response), the data were deemed to be useable as long as the data were qualified as estimated. As noted in the CDM Response, the method holding times for the hazardous characteristics of reactivity and corrosivity are not well defined and there is no holding time for the ignitability method. Moreover, it is believed that the methods for determining reactivity are seriously flawed. Consequently, project specific considerations and engineering judgment should be employed to determine whether or not the characteristics of these samples might affect the viability of the project.

The substantial amount of QC problems that were observed during the analyses was primarily attributed to matrix interference and not to unacceptable laboratory performance, where matrix interference refers to the effects that arose from the native physical or chemical composition of the sediment. The reported data appear to meet the specifications in the SOW, and they are of adequate quality and applicable for the intended purpose of the sample collection and analysis effort. As with all laboratory results with qualified data and quality control problems, the associated data should be should be used with caution. It is also important to note that there were often substantial variations in analyte concentrations between the field sample (FS-2004-B05) and field duplicate (SF-2004-D05), and this indicates that a considerable amount of matrix interference and/or environmental sample heterogeneity was present.

Richard Saichek
Environmental Engineering Section

CDM Response

Responses to Comments / Questions regarding Laboratory Data

Date: June 21, 2004

Re: South Fork South Branch Chicago River, Sediment Sample Analyses
Comments/Questions received June 9, 2004 via e-mail

The questions from Mr. Saichek are listed below, followed by the CDM response:

1. According to the CDM Sampling Plan, there was a 1 day (24-hour) holding time for each of the following tests: Flash Point, Soil and Waste pH, Reactive Cyanide, and Reactive Sulfide. This holding time was exceeded for many of these analyses.

   CDM has discussed this issue extensively with the Mitkem laboratory President, Vice President, Laboratory Operations Manager, and Project Manager. Mitkem has consulted the U.S. Environmental Protection Agency (EPA) Methods Information Communication Exchange (MICE) and CDM believes the data are useable, as explained below. CDM's chemist and data validator, Scott Kirchner, has reviewed the data in question and has been involved in discussions over the past 10 days about these data and believes that, if he were validating these data (not in the scope for CDM), he would accept these data and assign a "J" qualifier (estimated concentration) to these results.

   a. There is no specific 24-hour holding time listed in the analytical method for these four EPA SW-846 methods. Instead, the analytical method for EPA SW-846 Method 9045, 7.3.3.2, and 7.3.4.2, states that samples should be analyzed as soon as possible (while maintaining the samples under refrigeration and in the dark, which occurred). CDM typically interprets this to mean 24 hours, which is what was included in Table 6 of the SAP (January 2004); however, 24 hours is not a specific EPA requirement.

      For flash point, the CDM SAP Table 6 holding time was in error because no holding time, not even "as soon as possible," is listed in the analytical method (SW 1010)

   b. Virtually all other SW-846 methods have specific holding times listed; some even specifically specify a 24-hour holding time. This suggests a holding time of 24 hours for pH, reactive cyanide and reactive sulfide does not reflect a regulatory requirement and longer holding times may be acceptable.

      Mitkem, based on their chemistry expertise and knowledge of the scientific literature regarding analytical testing, believes that there is no scientific basis for a holding time of 24 hours for these analyses and that use of a longer

holding time criteria does not cause significant change in the reliability of the data (as long as samples were stored properly, as was the case for this project).

c. Mitkem contacted the EPA MICE (Methods Information Communication Exchange, www.epa.gov/epaoswer/hazwaste/test/mice.htm) service, which is a service that provides reference information for RCRA and SW-846 issues. EPA MICE confirmed that no specific holding times exist for these methods. They stated that one week is generally considered the acceptable holding time for pH on a soil/solid sample. The same one week time period could also be reasonably applied to flashpoint analyses, as long as the samples were stored in the recommended manner (which occurred). They stated the holding times for the total analysis methods could be applied to the reactivity methods. Based on the information from the EPA MICE service, one week would be considered acceptable for the pH, flashpoint and reactive sulfide analyses, with two weeks considered reasonable for reactive cyanide because the total cyanide holding time is 14 days (SAP Table 5).

d. The SW-846 7.3.3.2 and 7.3.4.2 methods of analysis for reactivity are believed by EPA to be seriously flawed (www.epa.gov/epaoswer/hazwaste/test/freact.htm) and generate data that could grossly underestimate the true concentrations. This EPA source says "The EPA does not recommend" use of the SW-846 Chapter 7 Sections 7.3.3.2 and 7.3.4.2 analytical methods and threshold criteria for reactive cyanide and reactive sulfide. MICE also provided information that the reactivity methods were being withdrawn in favor of total analyses for cyanide and sulfide.

e. Mitkem performed all pH and flashpoint analyses within one week from sample collection. The reactive sulfide analyses were performed within 14 days or less from collection, which is within a factor of two of the EPA MICE-suggested one week holding time for the total sulfide test. Data validation guidelines generally consider analyses performed within a factor of two of the holding time to be usable as estimates. Because EPA has serious doubts about the reliability of the reactivity analyses as discussed above, the data should be considered to be estimates ("J" qualifier) regardless of holding time.

Reactive cyanide analyses were performed within 14 days with the exception of three samples analyzed on the 15th day. All samples analyzed within 14 days are within the EPA's recommended holding time for the total cyanide analysis method. The three samples analyzed on the 15th day were analyzed within a factor of two of the holding time, and should also be considered estimates in the same manner as reactive sulfide. Please note that total cyanide analyses were also performed on these samples and that the total cyanide results ranged from 0.49 to 9.3 mg/kg, all below the SW-846 Section 7.3.3.2 interim threshold level of 250 mg/kg.

f. Finally, the typical use for the RCRA characteristic analyses is to determine if the material should be disposed as a hazardous waste. Different waste haulers may have different criteria for acceptability of analytical data. Mitkem spoke with the waste hauler used by their company (Univar, Inc.) to determine their procedures. They stated that since no specific holding time is provided in the method, they do not evaluate holding times to determine acceptability of data for these RCRA characteristics.

2. In your data summary for the VOCs, you report the results of SF-2004-B03 and SF-2004-B03DL, but do not report the results of SF-2004-B03DL1. Would you let me know if SF-2004-B03DL1 was disregarded from the summary because it exceeded the holding time? If not, please let me know why you disregarded the results of SF-2004-B03DL1.

   The results for SF-2004-B03DL1 should have been included in the data summary. These results are included in the full data package and the EQUIS-format EDD from the laboratory. They were omitted from the data summary due to an oversight; no other samples have more than one dilution as B03 did. CDM will provide these results with the final data package.

3. On page 3, the narrative statement, under Volatile Analysis, the lab manager mentions lists SF-2004-B01 as one of the samples that was reanalyzed at dilution using smaller sample aliquots. I believe this should be changed to sample SF-2004-B01A since SF-2004-B01 was not analyzed.

   Yes, that was a typographical error. The sample in question was sample SF-2004-B01A. CDM will provide a corrected page.

4. It appears that the method blanks met the required detection limits, but there were several methods with compounds that were reported as not detected at concentrations greater than the required detection limit. For all the analyses, would you please report the detection limit for each parameter, and, if the detection limit exceeded the required detection limit, please provide an explanation. By the detection limit, I mean the threshold concentration below which the target analyte concentration would be reported as undetected.

   For those cases where the method blank met the required detection limit, but the sample results did not (PCBs, SVOCs, and VOCs), either/or the following were true:

   - the elevated percent moisture in the sediment samples caused elevated reporting limits. The reporting limits are adjusted to a "dry weight" basis and many of the samples contained 50 to 67% moisture, resulting in 2 to 3 times higher reporting limits. Method blanks are calculated at 100% solids, so the reporting limit is not elevated due to dry weight adjustments.

- Certain samples also required analysis at dilution due to concentrations of target and non-target analytes. This also served to elevate the reporting limits, up to 10 times, but these were in samples that had high concentrations of analytes.
- For hexavalent chromium, the laboratory method detection limit is 1 mg/kg and the typical reporting limit is 4 mg/kg; actual reporting limits were 5 to 12 due to percent moisture.

5. Would you please provide the dates for the TCLP extractions for the VOCs and the extractions for the analyses of Chromium VI?

   - TCLP extractions for the VOCs were conducted on 4/27/04 for samples B02, B03, B05, and D05, on 4/28/04 for samples B07, B10, B11, B12, and B13, and 4/29/04 for samples B1A, B04, B06, B08, and B09. These extraction dates are listed in file CO344_CDM_CHICAGO_EQUIS_SW8260B_TCLP.xls, "lab test" worksheet, Column Q for leachate date.
   - Hexavalent chromium was prepared on 5/4/04 (lab full data package pages 4821-4822).

6. I believe there is a minor error on page 210, because the date received for sample SF-2004-D05 is reported as 05/22/04 and the date analyzed is 04/28/04.

   Yes that was a typographical error. The date received should read 4/22/04. CDM will provide a corrected page.

7. As listed in the CDM summary, the methods for hexavalent chromium (7196), ammonia nitrogen (SM 4500), chemical oxygen demand (SM 5220), and total organic carbon (415.1) differed from the methods planned in the Scope of Work (SOW) and CDM Sampling Plan. Would you please provide the reasons for using these different methods?

   Several methods listed in the Sampling Plan apply only to aqueous media (COD by 410.4, Ammonia Nitrogen by 350.2, Hexavalent Chromium by 3500 and TOC by 9060). The samples for this project were sediment samples, so the methods listed do not directly apply and the SAP was in error.

   Mitkem analyzed the samples by equivalent methods for sediment or soil matrix for the applicable target parameters as covered in CFR 40 Part 136 Subchapter D, for COD and Ammonia Nitrogen. Mitkem analyzed the samples for TOC in soil by the Loyd Kahn modification to method 415.1, which specifically addresses soil samples, and analyzed hexavalent chromium by SW-846 Methods 3060/7196A, which also specifically addresses soil samples. CDM's chemist and data validator,

Scott Kirchner, has reviewed the analytical methods performed and believes the analyses performed by the laboratory are suitable for sediment/soil samples.

8. Per the SOW and Table 5 of the CDM Sampling Plan, %Total Solids by Method 160.3 was supposed to be performed, but I did not see the results in the summary. For Method 160.3, the results are reported in units of mg/L. I noticed that percent solids analyses are reported along with the grain size distributions, but the method for this determination was not reported. Would you please let me know the method used to determine the percent solids with the grain size distributions, and tell me if Method 160.3 was performed?

   %Total solids by Method 160.3 is designed for aqueous samples only, so the SAP was in error. Following discussion with CDM, Mitkem performed % solid test (also called % moisture) according to their standard operating procedures (SOPs). This procedure is generally the same as Method 160.3 (loss of weight after oven drying). These results were reported on page 4828 of the main data package and CDM will add these results to the data tables in Appendix D of the final report. CDM's chemist and data validator, Scott Kirchner, believes the analyses performed by the laboratory are suitable for sediment/soil samples.

9. A significant number of MS/MSD samples were outside the recovery limits and several were outside the QC limits. SW 846 Method 8000B (8.5) explains how to determine the concentration of the MS and LCS for chromatographic separations. Would you let me know why the laboratory selected the particular spike concentrations that were chosen for each of the methods?

   The laboratory used spike concentrations near the mid-point of the calibration curves, as allowed by SW-846. The MS/MSD spike concentrations were the same as used for the LCS.

   CDM and Mitkem believes that matrix interference exists for several of the tests, which has caused some MS/MSD results to exceed control limits, but the data are still useable.

   - For the VOCs MS/MSD, where 50 of 132 results were outside of recovery limits, only 1 of 7 historical samples (and only 3 VOCs of more than 30 on the VOCs target analyte list) had an elevated VOC concentration, so normal spike concentrations were used.
   - For the SVOCs MS/MSD, where 49 out of 128 results were outside of recovery limits, the target analytes per the SOW were non-PAHs. Past sampling data provided in the SOW typically showed non-detects for non-PAH SVOCs (e.g., phenols), so past data did not indicate particularly high concentrations that would suggest using the 2-to-4-times spiking level. Therefore, normal spike concentrations were used.

Other QC measures, such as laboratory control sample recoveries and surrogate standard recoveries, were evaluated by the laboratory to assess whether the matrix spike control limit exceedances were due to sample-related conditions or to laboratory QC issues. Sample chromatograms were also evaluated for non-target compound interferences. For these samples, the laboratory believes the matrix spike exceedances are due to sample-related conditions, not due to laboratory QC failures. Some recoveries were above control limits, some below, not indicating a clear directional bias.

The LCS results recoveries were within criteria, while many MS/MSD recoveries were not for certain analytical tests, indicating matrix interference. The matrix spike recovery and RPD issues were discussed in the project narrative.

- As described in SW-846: Per SW-846 Method 8000, Section 8.5.5, the matrix spike recoveries were evaluated and compared to the recoveries in the associated laboratory control sample. Where LCS data are within the limits, but matrix spike recoveries exceed the limits, matrix interference is indicated.
- Per Army EM 200-1-3, Section I.11.4.3, where concentrations of target analytes exceed spike concentrations, recoveries are invalid, and indicate matrix interference.

Appendix F

Particle Size Laboratory Results

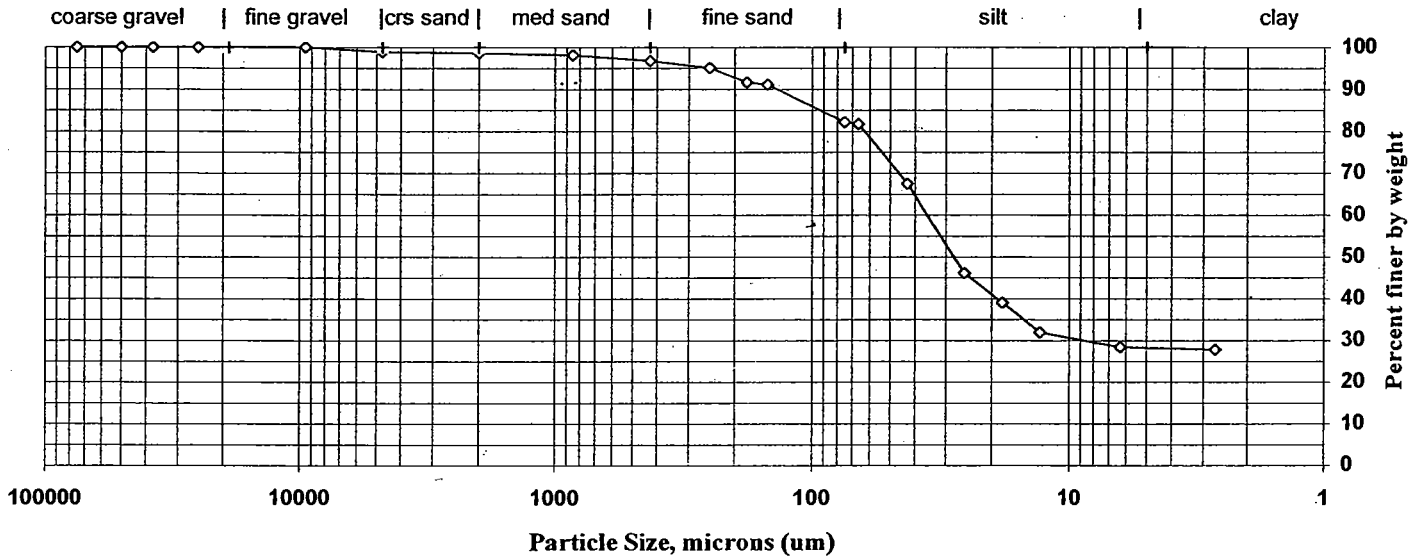
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568680 **Sample ID:** 02D SF-2004-B02

Percent Solids:	58.1%	**Maximum Particle Size:**	9.5 mm
Specific Gravity:	1.44	**Shape (> #10):**	angular
Non-soil mass:	0.9%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	98.9	1.1
#10	2000	98.7	0.3
#20	850	98.2	0.5
#40	425	96.8	1.4
#60	250	95.1	1.6
#80	180	91.7	3.5
#100	150	91.2	0.5
#200	75	82.2	8.9
Hydrometer	66.3	81.7	0.5
|	42.8	67.5	14.2
|	25.5	46.2	21.3
|	18.2	39.1	7.1
|	13.1	32.0	7.1
|	6.3	28.4	3.6
V	2.7	27.8	0.6

Soil Classification	Percent of Total Sample
Gravel	1.1
Sand	16.7
Coarse Sand	0.3
Medium Sand	1.9
Fine Sand	14.6
Silt	50.3
Clay	32.0

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

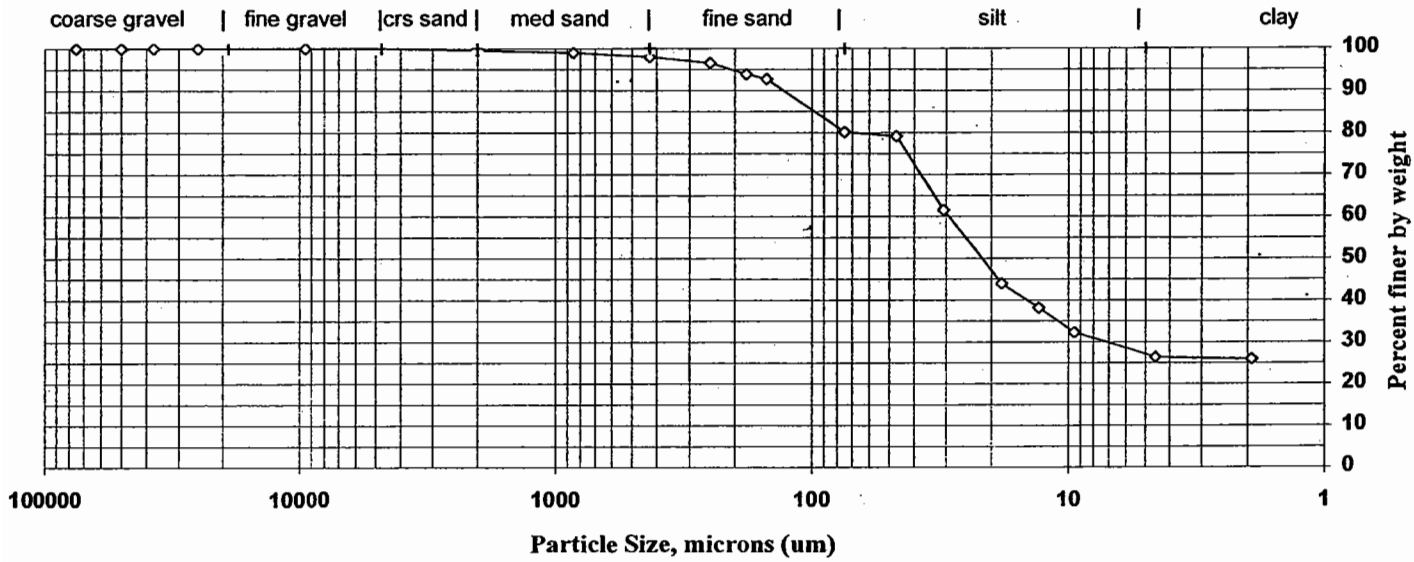
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568681 **Sample ID:** 03D SF-2004-B03

Percent Solids:	45.2%	**Maximum Particle Size:**	Crs sand
Specific Gravity:	1.84	**Shape (> #10):**	angular
Non-soil mass:	0.5%	**Hardness (> #10):**	brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.7	0.3
#20	850	99.0	0.6
#40	425	98.0	1.0
#60	250	96.5	1.5
#80	180	93.9	2.7
#100	150	92.8	1.1
#200	75	80.1	12.6
Hydrometer	47.0	79.2	1.0
|	30.7	61.6	17.6
|	18.3	44.0	17.6
|	13.0	38.1	5.9
|	9.5	32.3	5.9
|	4.5	26.4	5.9
V	1.9	25.9	0.5

Soil Classification	Percent of Total Sample
Gravel	0.0
Sand	19.9
Coarse Sand	0.3
Medium Sand	1.6
Fine Sand	17.9
Silt	47.9
Clay	32.3

Dispersion Device: Mechanical mixer with a metal paddle.

Dispersion Period: 1 minute

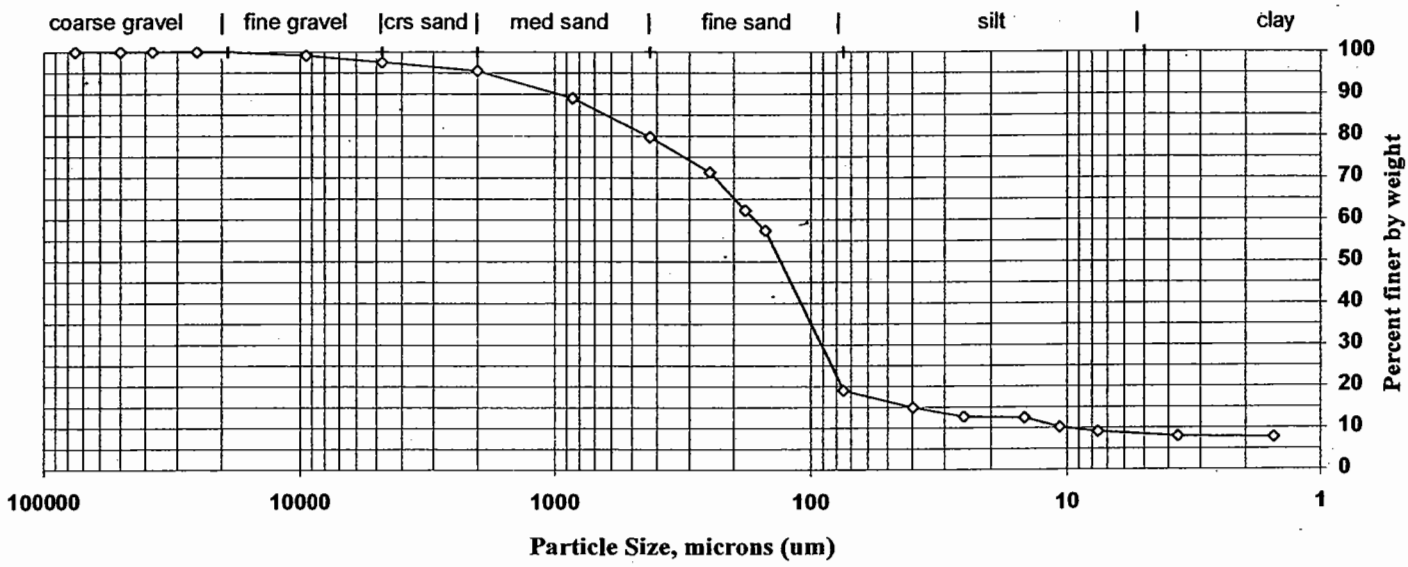
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568682 **Sample ID:** 04C SF-2004-601

Percent Solids:	54.3%	**Maximum Particle Size:**	19 mm
Specific Gravity:	2.34	**Shape (> #10):**	subangular
Non-soil mass:	2.3%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	99.1	0.9
#4	4750	97.6	1.6
#10	2000	95.5	2.1
#20	850	89.0	6.5
#40	425	79.8	9.2
#60	250	71.3	8.4
#80	180	62.2	9.1
#100	150	57.4	4.7
#200	75	19.1	38.4
Hydrometer	39.7	14.9	4.2
|	25.4	12.7	2.3
|	14.7	12.5	0.2
|	10.7	10.2	2.3
|	7.6	9.1	1.1
|	3.7	7.9	1.1
V	1.5	7.7	0.2

Soil Classification	Percent of Total Sample
Gravel	2.4
Sand	78.5
Coarse Sand	2.1
Medium Sand	15.7
Fine Sand	60.7
Silt	10.0
Clay	9.1

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

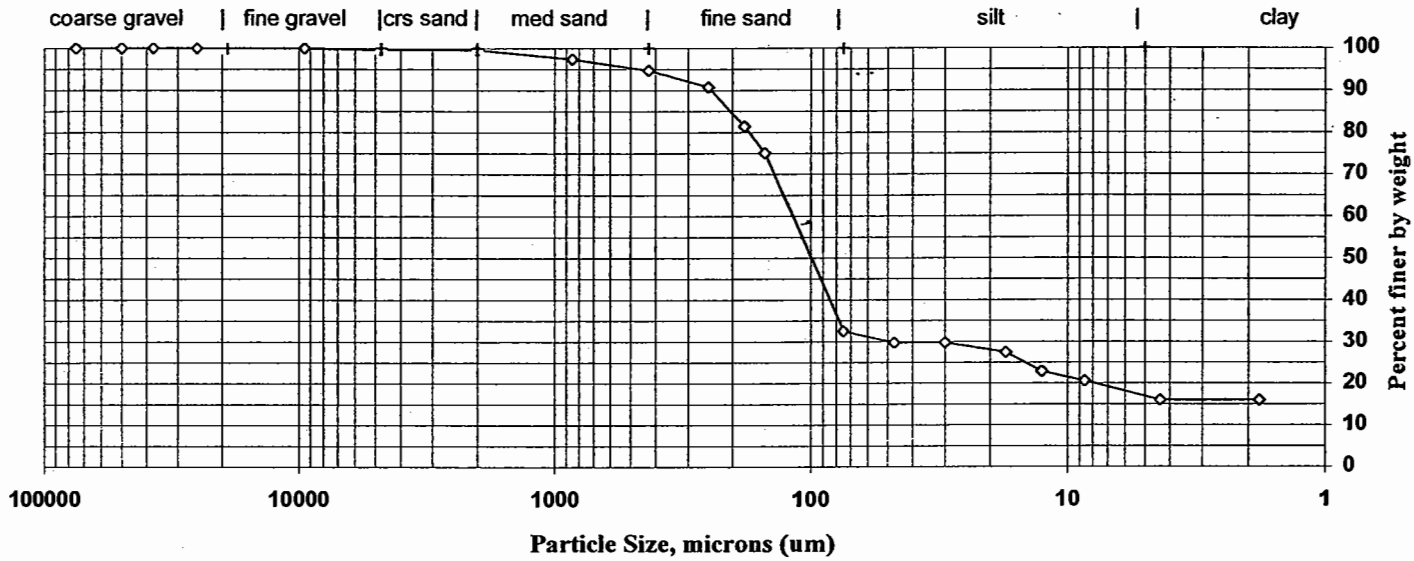
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568683 **Sample ID:** 05C SF-2004-G02

Percent Solids:	43.8%	**Maximum Particle Size:**	9.5 mm
Specific Gravity:	1.96	**Shape (> #10):**	subangular
Non-soil mass:	4.4%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.7	0.3
#10	2000	99.6	0.1
#20	850	97.4	2.2
#40	425	94.8	2.6
#60	250	90.7	4.0
#80	180	81.4	9.3
#100	150	75.1	6.3
#200	75	32.5	42.6
Hydrometer	47.2	29.7	2.8
|	29.9	29.7	0.0
|	17.3	27.4	2.3
|	12.6	22.9	4.6
|	8.6	20.6	2.3
|	4.3	16.0	4.6
V	1.8	16.0	0.0

Soil Classification	Percent of Total Sample
Gravel	0.3
Sand	67.2
Coarse Sand	0.1
Medium Sand	4.9
Fine Sand	62.3
Silt	11.9
Clay	20.6

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

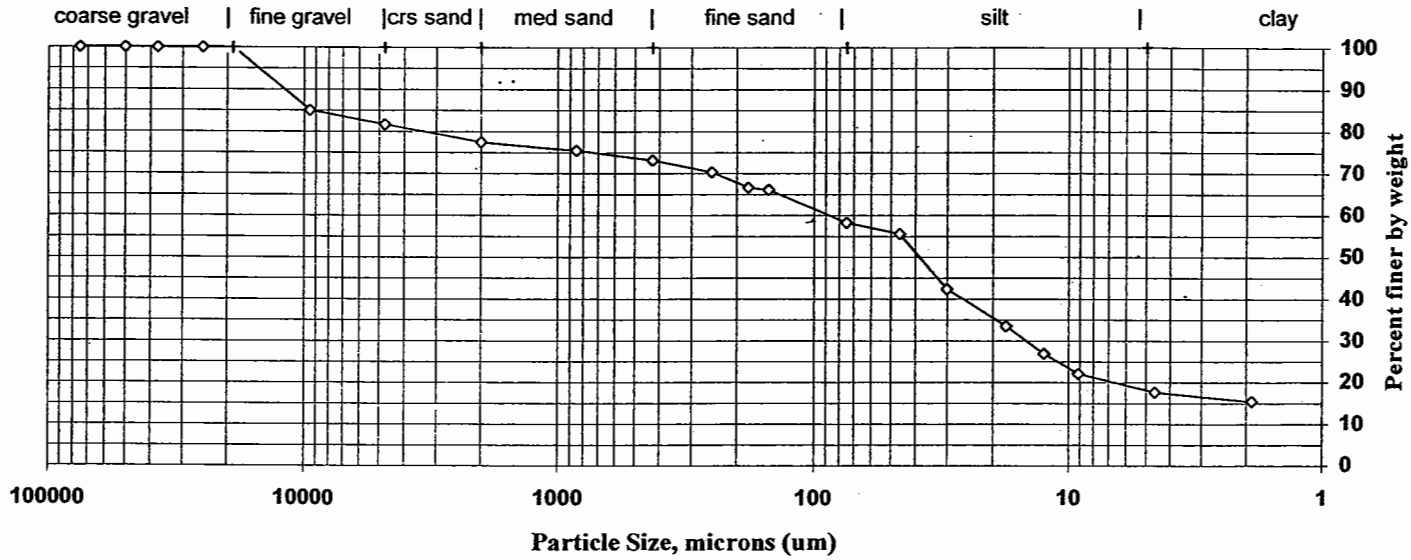
Particle Size of Soils by ASTM D422

Sample preparation method: **D2217**

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568684 **Sample ID:** 06D SF-2004-805

Percent Solids:	49.2%	**Maximum Particle Size:**	19 mm
Specific Gravity:	1.88	**Shape (> #10):**	angular
Non-soil mass:	2.3%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	85.0	15.0
#4	4750	81.6	3.4
#10	2000	77.5	4.1
#20	850	75.5	2.0
#40	425	73.1	2.3
#60	250	70.3	2.8
#80	180	66.7	3.7
#100	150	66.1	0.5
#200	75	58.3	7.9
Hydrometer	46.1	55.6	2.7
|	30.1	42.3	13.3
|	17.7	33.5	8.8
|	12.5	26.9	6.6
|	9.1	22.1	4.8
|	4.6	17.7	4.4
V	1.9	15.5	2.2

Soil Classification	Percent of Total Sample
Gravel	18.4
Sand	23.3
Coarse Sand	4.1
Medium Sand	4.3
Fine Sand	14.8
Silt	36.2
Clay	22.1

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

0040

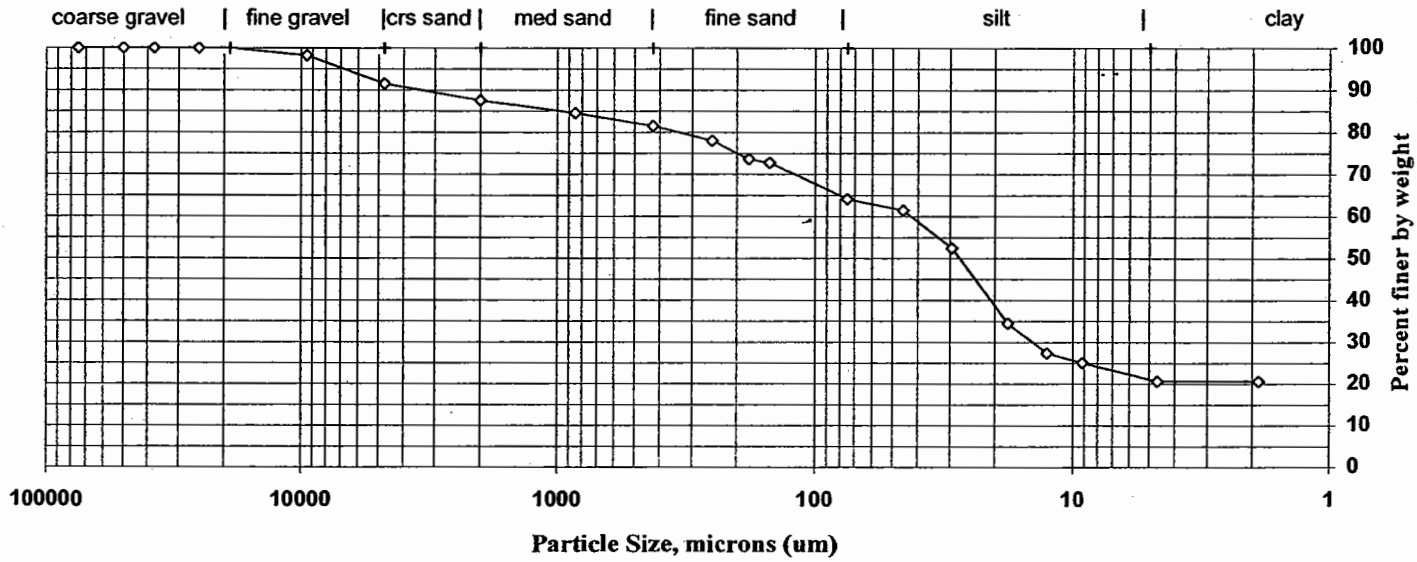
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568685 **Sample ID:** 07D SF-2004-D05

Percent Solids:	50.6%	**Maximum Particle Size:**	19 mm
Specific Gravity:	1.87	**Shape (> #10):**	angular
Non-soil mass:	0.8%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	98.3	1.7
#4	4750	91.5	6.7
#10	2000	87.6	4.0
#20	850	84.6	3.0
#40	425	81.5	3.1
#60	250	78.0	3.5
#80	180	73.6	4.4
#100	150	72.8	0.9
#200	75	64.1	8.7
Hydrometer	45.6	61.4	2.7
|	29.5	52.5	9.0
|	17.7	34.5	18.0
|	12.6	27.4	7.1
|	9.2	25.1	2.2
|	4.6	20.6	4.5
V	1.9	20.6	0.0

Soil Classification	Percent of Total Sample
Gravel	8.5
Sand	27.4
Coarse Sand	4.0
Medium Sand	6.1
Fine Sand	17.4
Silt	39.0
Clay	25.1

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

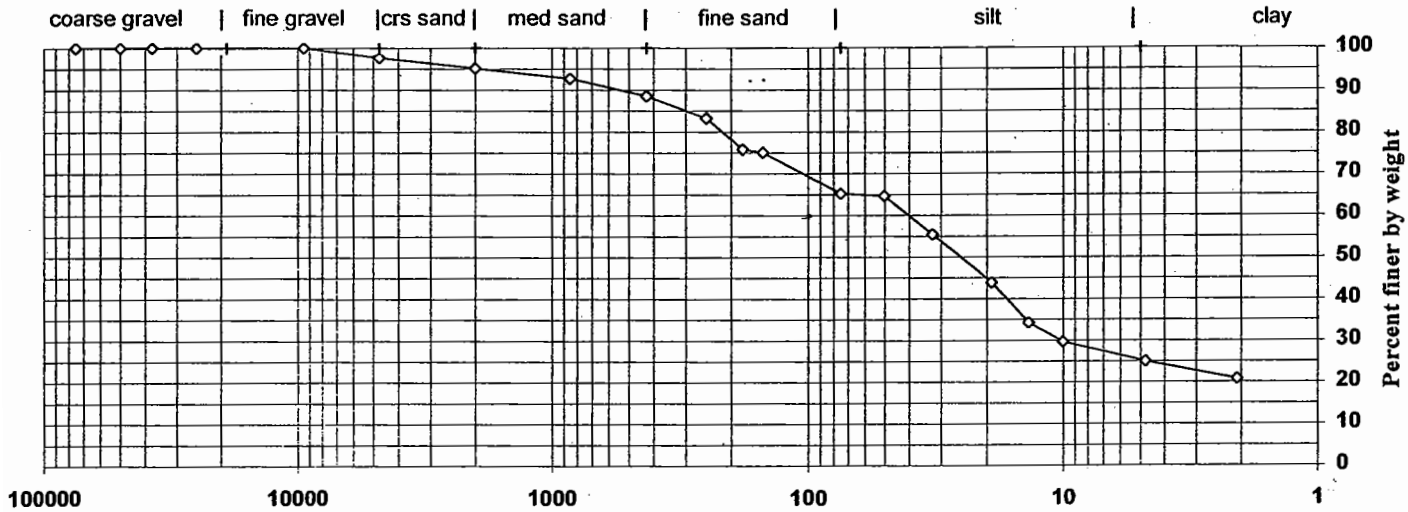
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568686 **Sample ID:** 08D SF-2004- B01A

Percent Solids:	49.7%	**Maximum Particle Size:**	9.5 mm
Specific Gravity:	1.73	**Shape (> #10):**	angular
Non-soil mass:	1.4%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	97.7	2.3
#10	2000	95.2	2.5
#20	850	92.8	2.4
#40	425	88.6	4.2
#60	250	83.2	5.3
#80	180	75.8	7.4
#100	150	75.1	0.7
#200	75	65.2	9.9
Hydrometer	50.1	64.7	0.5
|	32.4	55.5	9.2
|	19.2	43.9	11.6
|	13.7	34.3	9.6
|	10.0	29.7	4.6
|	4.8	25.0	4.6
V	2.1	20.8	4.2

Soil Classification	Percent of Total Sample
Gravel	2.3
Sand	32.5
Coarse Sand	2.5
Medium Sand	6.7
Fine Sand	23.4
Silt	35.5
Clay	29.7

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

0042

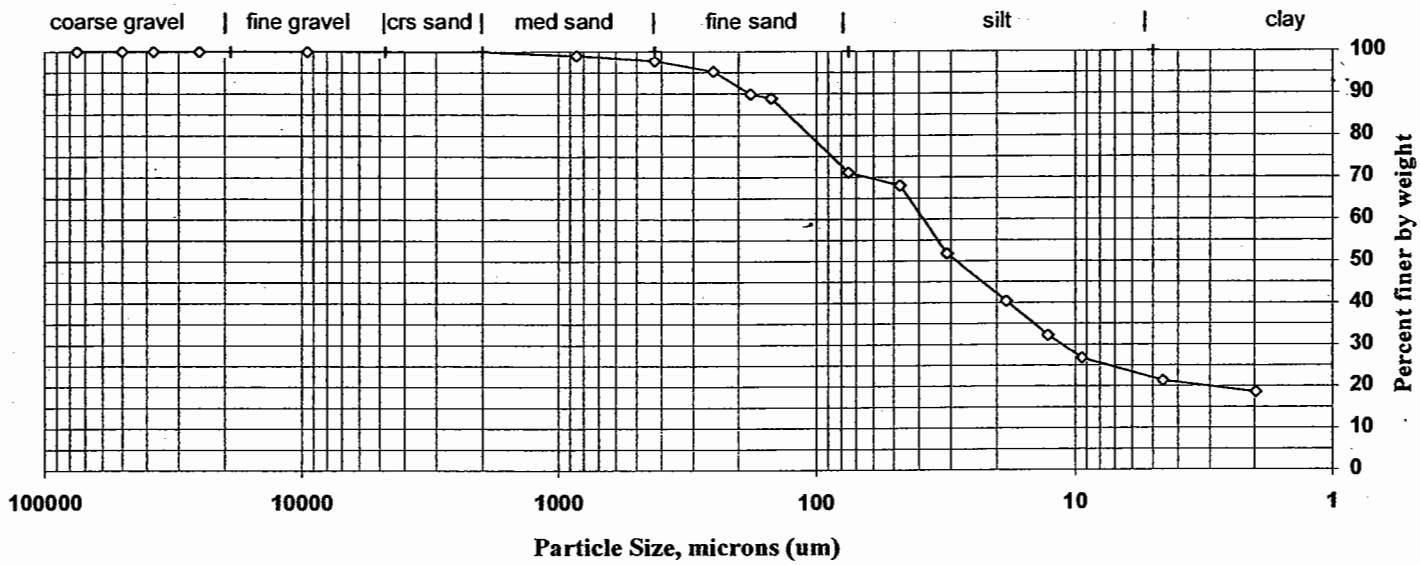
Particle Size of Soils by ASTM D422

Sample preparation method: **D2217**

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568687 **Sample ID:** 09D SF-2004-B09

Percent Solids:	45.4%	**Maximum Particle Size:**	Crs sand
Specific Gravity:	1.84	**Shape (> #10):**	angular
Non-soil mass:	0.9%	**Hardness (> #10):**	brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	100.0	0.0
#20	850	99.0	0.9
#40	425	97.8	1.2
#60	250	95.3	2.5
#80	180	89.8	5.4
#100	150	88.8	1.0
#200	75	71.2	17.7
Hydrometer	47.5	68.1	3.1
|	31.0	51.7	16.3
|	18.4	40.4	11.3
|	12.8	32.2	8.2
|	9.4	26.8	5.4
|	4.6	21.3	5.4
V	2.0	18.6	2.7

Soil Classification	Percent of Total Sample
Gravel	0.0
Sand	28.8
Coarse Sand	0.0
Medium Sand	2.2
Fine Sand	26.6
Silt	44.4
Clay	26.8

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

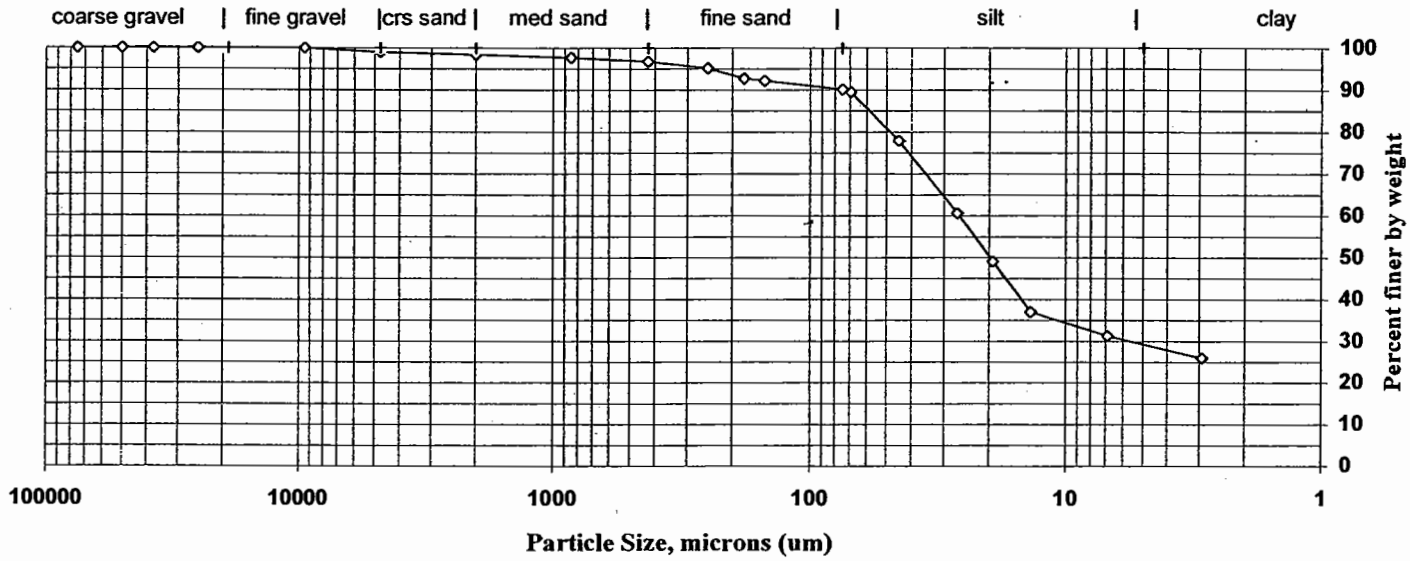
Particle Size of Soils by ASTM D422

Sample preparation method: **D2217**

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568688 **Sample ID:** 10D SF-2004-B04

Percent Solids:	60.0%	**Maximum Particle Size:**	9.5 mm
Specific Gravity:	1.37	**Shape (> #10):**	subangular
Non-soil mass:	0.3%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.0	1.0
#10	2000	98.4	0.6
#20	850	97.7	0.6
#40	425	96.8	0.9
#60	250	95.2	1.6
#80	180	92.7	2.5
#100	150	92.2	0.5
#200	75	90.1	2.1
Hydrometer	69.2	89.5	0.7
|	44.8	77.9	11.5
|	26.7	60.6	17.3
|	19.3	49.1	11.5
|	13.6	37.0	12.0
|	6.9	31.3	5.8
V	2.9	26.0	5.3

Soil Classification	Percent of Total Sample
Gravel	1.0
Sand	8.9
Coarse Sand	0.6
Medium Sand	1.6
Fine Sand	6.7
Silt	53.1
Clay	37.0

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

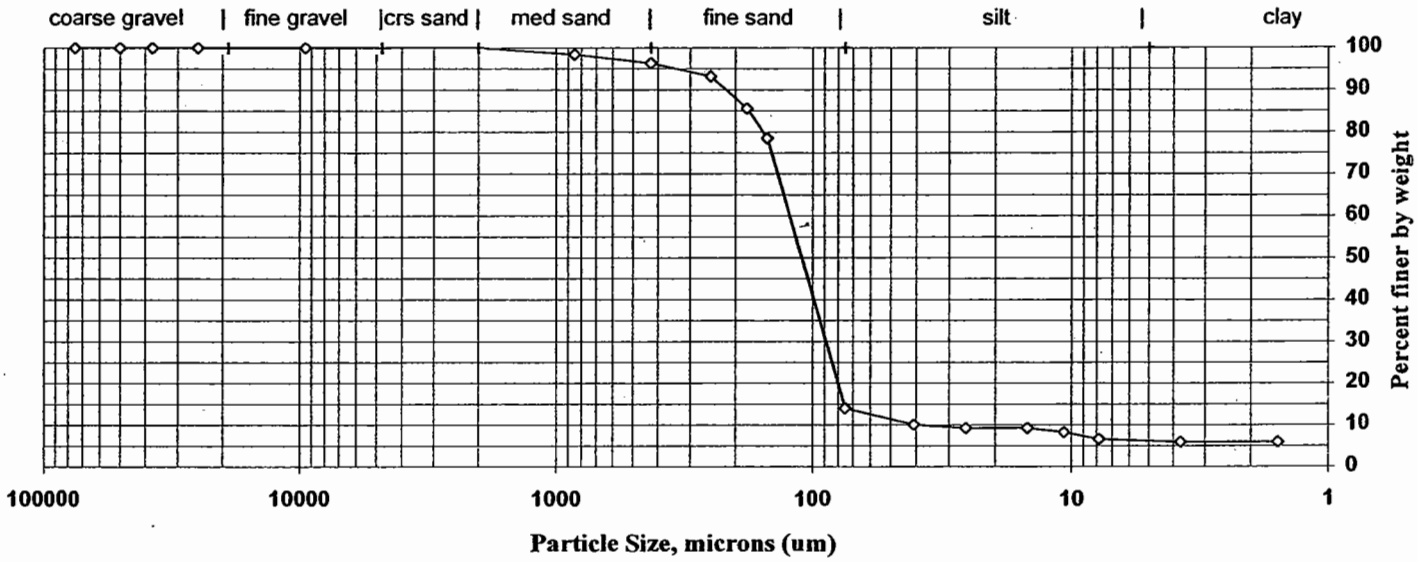
Particle Size of Soils by ASTM D422

Sample preparation method: **D2217**

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568689 **Sample ID:** 11C SF-2004-603

Percent Solids:	67.7%	**Maximum Particle Size:**	Med sand
Specific Gravity:	2.30	**Shape (> #10):**	N/A
Non-soil mass:	2.5%	**Hardness (> #10):**	N/A



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	100.0	0.0
#20	850	98.4	1.6
#40	425	96.4	2.0
#60	250	93.2	3.2
#80	180	85.5	7.6
#100	150	78.5	7.0
#200	75	14.0	64.6
Hydrometer	40.8	10.1	3.9
|	25.9	9.3	0.8
|	15.0	9.3	0.0
|	10.7	8.3	1.0
|	7.8	6.6	1.7
|	3.8	5.9	0.7
V	1.6	5.9	0.0

Soil Classification	Percent of Total Sample
Gravel	0.0
Sand	86.0
Coarse Sand	0.0
Medium Sand	3.6
Fine Sand	82.4
Silt	7.4
Clay	6.6

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

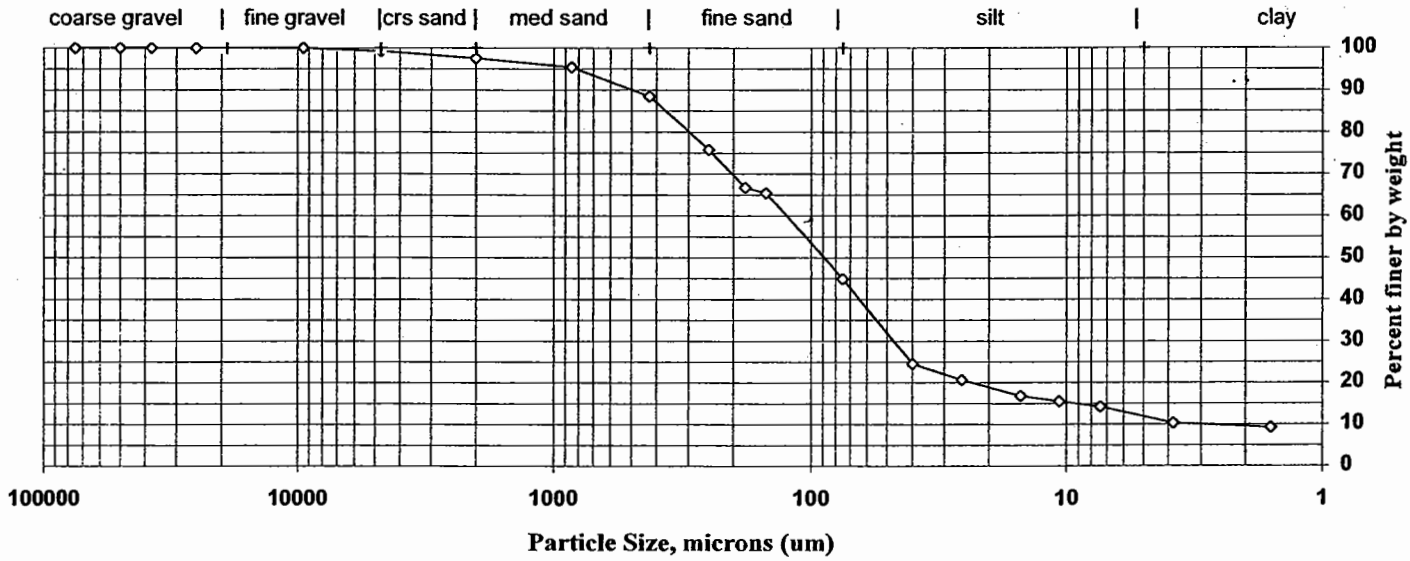
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568690 **Sample ID:** 12D SF-2004-B08

Percent Solids:	54.6%	**Maximum Particle Size:**	9.5 mm
Specific Gravity:	2.27	**Shape (> #10):**	subangular
Non-soil mass:	3.2%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	99.3	0.7
#10	2000	97.6	1.7
#20	850	95.4	2.2
#40	425	88.5	6.9
#60	250	75.7	12.7
#80	180	66.7	9.0
#100	150	65.5	1.3
#200	75	44.8	20.6
Hydrometer	39.9	24.5	20.3
|	25.6	20.7	3.9
|	15.0	16.8	3.9
|	10.7	15.5	1.3
|	7.4	14.2	1.3
|	3.8	10.3	3.9
V	1.6	9.3	1.1

Soil Classification	Percent of Total Sample
Gravel	0.7
Sand	54.4
Coarse Sand	1.7
Medium Sand	9.1
Fine Sand	43.6
Silt	30.6
Clay	14.2

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

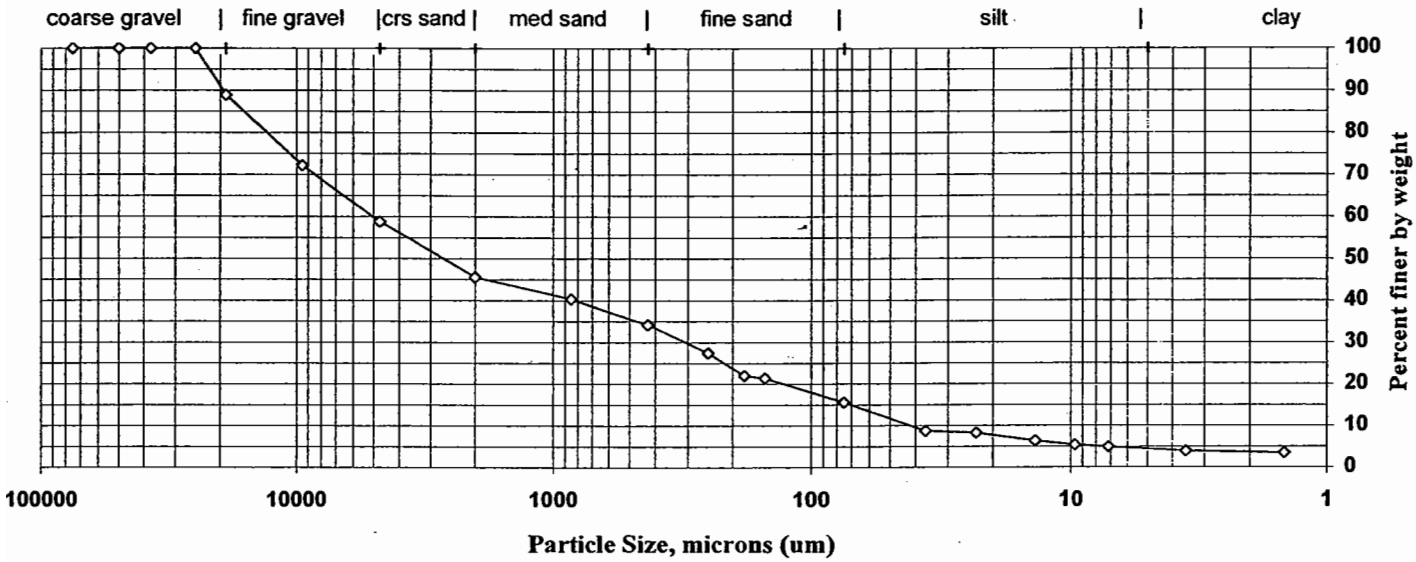
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568691 **Sample ID:** 13D SF-2004-B06

Percent Solids:	72.9%	**Maximum Particle Size:**	25 mm
Specific Gravity:	2.50	**Shape (> #10):**	angular
Non-soil mass:	0.1%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	88.9	11.1
3/8 inch	9500	72.2	16.7
#4	4750	58.8	13.3
#10	2000	45.5	13.3
#20	850	40.4	5.2
#40	425	34.1	6.2
#60	250	27.4	6.7
#80	180	22.0	5.4
#100	150	21.4	0.6
#200	75	15.6	5.8
Hydrometer	36.6	8.7	6.9
|	23.3	8.2	0.5
|	13.7	6.3	1.9
|	9.6	5.4	1.0
|	7.1	4.9	0.5
|	3.5	3.9	1.0
V	1.5	3.4	0.5

Soil Classification	Percent of Total Sample
Gravel	41.2
Sand	43.2
Coarse Sand	13.3
Medium Sand	11.4
Fine Sand	18.5
Silt	10.7
Clay	4.9

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

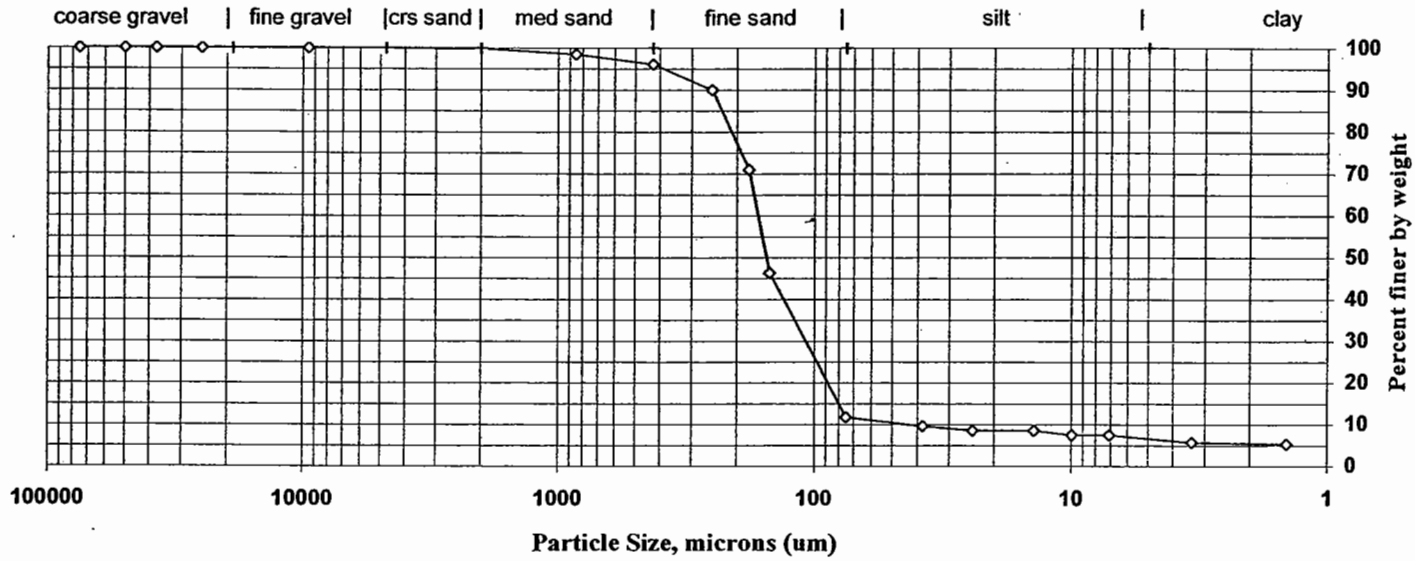
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568692 **Sample ID:** 14C SF-2004-604

Percent Solids:	53.9%	**Maximum Particle Size:**	Crs sand
Specific Gravity:	2.53	**Shape (> #10):**	angular
Non-soil mass:	0.2%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.8	0.2
#20	850	98.5	1.3
#40	425	96.1	2.4
#60	250	90.0	6.1
#80	180	71.1	19.0
#100	150	46.4	24.7
#200	75	11.8	34.6
Hydrometer	38.1	9.6	2.1
|	24.2	8.6	1.1
|	14.0	8.6	0.0
|	9.9	7.5	1.1
|	7.1	7.5	0.0
|	3.4	5.7	1.8
V	1.4	5.3	0.4

Soil Classification	Percent of Total Sample
Gravel	0.0
Sand	88.2
Coarse Sand	0.2
Medium Sand	3.7
Fine Sand	84.4
Silt	4.3
Clay	7.5

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

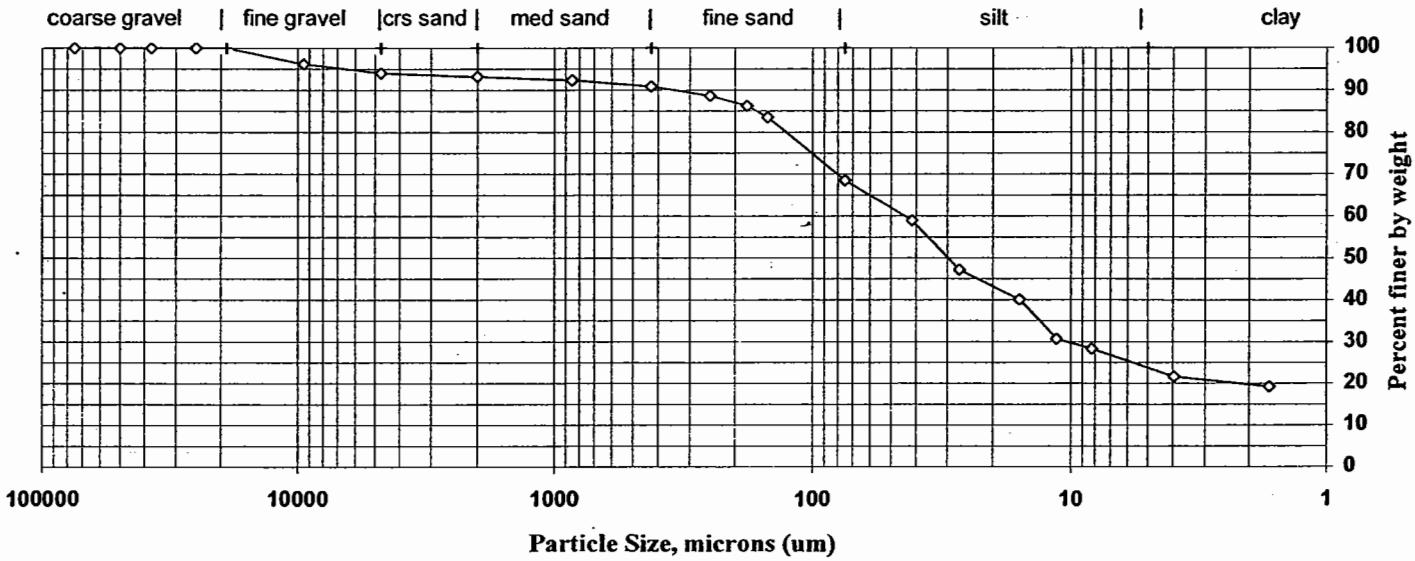
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568693 **Sample ID:** 15D SF-2004-B07

Percent Solids:	47.0%	**Maximum Particle Size:**	19 mm
Specific Gravity:	2.10	**Shape (> #10):**	angular
Non-soil mass:	0.8%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	96.1	3.9
#4	4750	94.0	2.1
#10	2000	93.2	0.8
#20	850	92.4	0.8
#40	425	90.8	1.6
#60	250	88.6	2.2
#80	180	86.2	2.4
#100	150	83.5	2.7
#200	75	68.5	15.0
Hydrometer	41.5	59.0	9.6
|	27.0	47.2	11.8
|	15.8	40.1	7.1
|	11.4	30.7	9.4
|	8.2	28.3	2.4
|	3.9	21.6	6.7
V	1.7	19.3	2.4

Soil Classification	Percent of Total Sample
Gravel	6.0
Sand	25.5
Coarse Sand	0.8
Medium Sand	2.4
Fine Sand	22.3
Silt	40.2
Clay	28.3

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

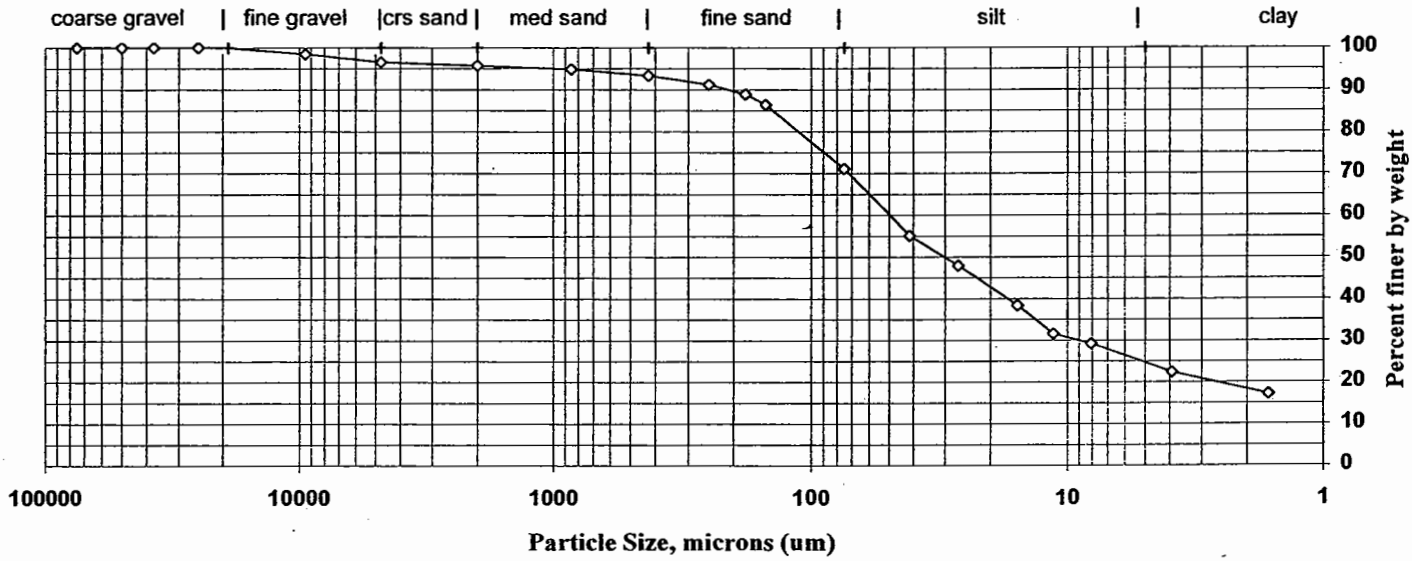
Particle Size of Soils by ASTM D422

Sample preparation method: **D2217**

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99787
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	23-Apr-04	**Start Date:**	23-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568693DP **Sample ID:** 15DREP

Percent Solids:	46.3%	**Maximum Particle Size:**	19 mm
Specific Gravity:	2.13	**Shape (> #10):**	angular
Non-soil mass:	0.6%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	98.5	1.5
#4	4750	96.6	1.9
#10	2000	95.7	0.9
#20	850	94.9	0.8
#40	425	93.4	1.5
#60	250	91.2	2.2
#80	180	88.9	2.2
#100	150	86.4	2.5
#200	75	71.1	15.3
Hydrometer	41.4	55.2	15.9
|	26.6	48.0	7.2
|	15.7	38.4	9.6
|	11.4	31.6	6.8
|	8.1	29.2	2.4
|	3.9	22.4	6.8
V	1.7	17.2	5.2

Soil Classification	Percent of Total Sample
Gravel	3.4
Sand	25.5
Coarse Sand	0.9
Medium Sand	2.3
Fine Sand	22.3
Silt	41.9
Clay	29.2

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

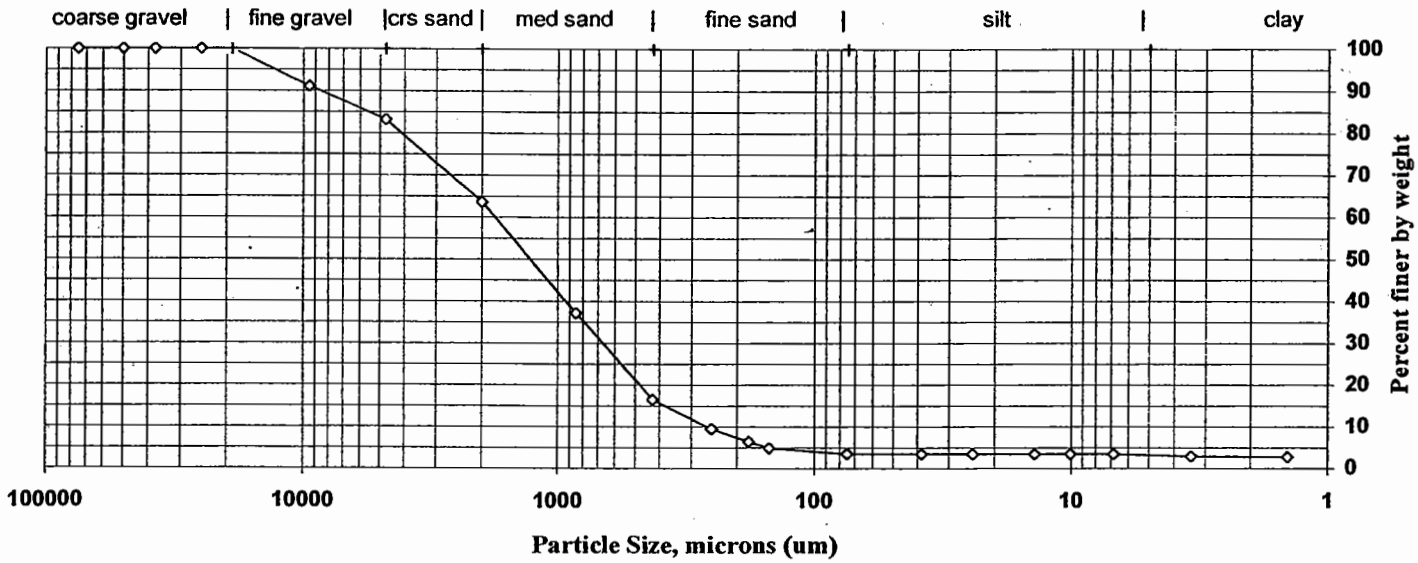
Particle Size of Soils by ASTM D422

Sample preparation method: **D2217**

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99816
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	26-Apr-04	**Start Date:**	26-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568878 **Sample ID:** 16D SF-2004-B13

Percent Solids:	78.0%	**Maximum Particle Size:**	19 mm
Specific Gravity:	2.55	**Shape (> #10):**	subangular
Non-soil mass:	1.5%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	91.1	8.9
#4	4750	83.1	7.9
#10	2000	63.6	19.5
#20	850	37.1	26.5
#40	425	16.5	20.6
#60	250	9.5	7.0
#80	180	6.4	3.1
#100	150	4.9	1.5
#200	75	3.5	1.4
Hydrometer	38.3	3.4	0.1
|	24.2	3.4	0.0
|	14.0	3.4	0.0
|	10.1	3.4	0.0
|	6.8	3.4	0.0
|	3.4	2.9	0.6
V	1.4	2.8	0.1

Soil Classification	Percent of Total Sample
Gravel	16.9
Sand	79.6
Coarse Sand	19.5
Medium Sand	47.1
Fine Sand	13.0
Silt	0.1
Clay	3.4

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

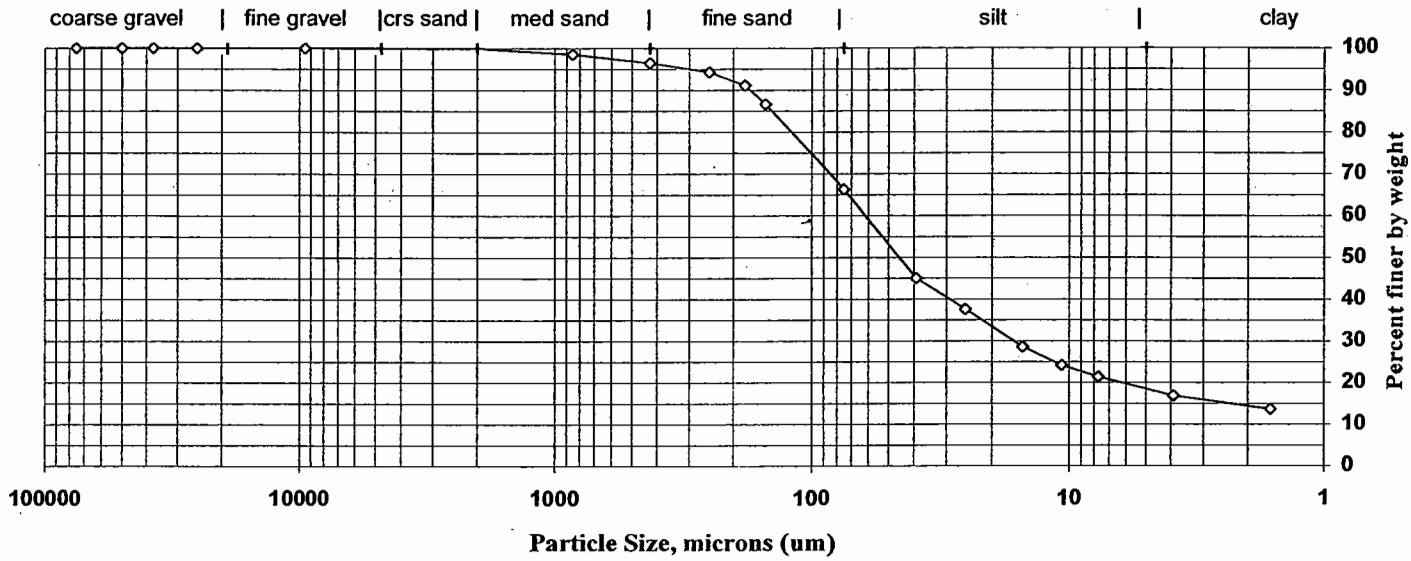
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99816
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	26-Apr-04	**Start Date:**	26-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568879 **Sample ID:** 17D SF-2004-BR

Percent Solids:	48.5%	**Maximum Particle Size:**	Crs sand
Specific Gravity:	2.16	**Shape (> #10):**	subangular
Non-soil mass:	1.8%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	100.0	0.0
#20	850	98.5	1.4
#40	425	96.5	2.0
#60	250	94.3	2.2
#80	180	91.1	3.1
#100	150	86.7	4.5
#200	75	66.3	20.4
Hydrometer	39.1	45.1	21.2
|	25.4	37.6	7.5
|	15.1	28.6	9.0
|	10.7	24.1	4.5
|	7.7	21.4	2.7
|	3.9	16.9	4.5
V	1.6	13.7	3.2

Soil Classification	Percent of Total Sample
Gravel	0.0
Sand	33.7
Coarse Sand	0.0
Medium Sand	3.4
Fine Sand	30.2
Silt	44.9
Clay	21.4

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

0052

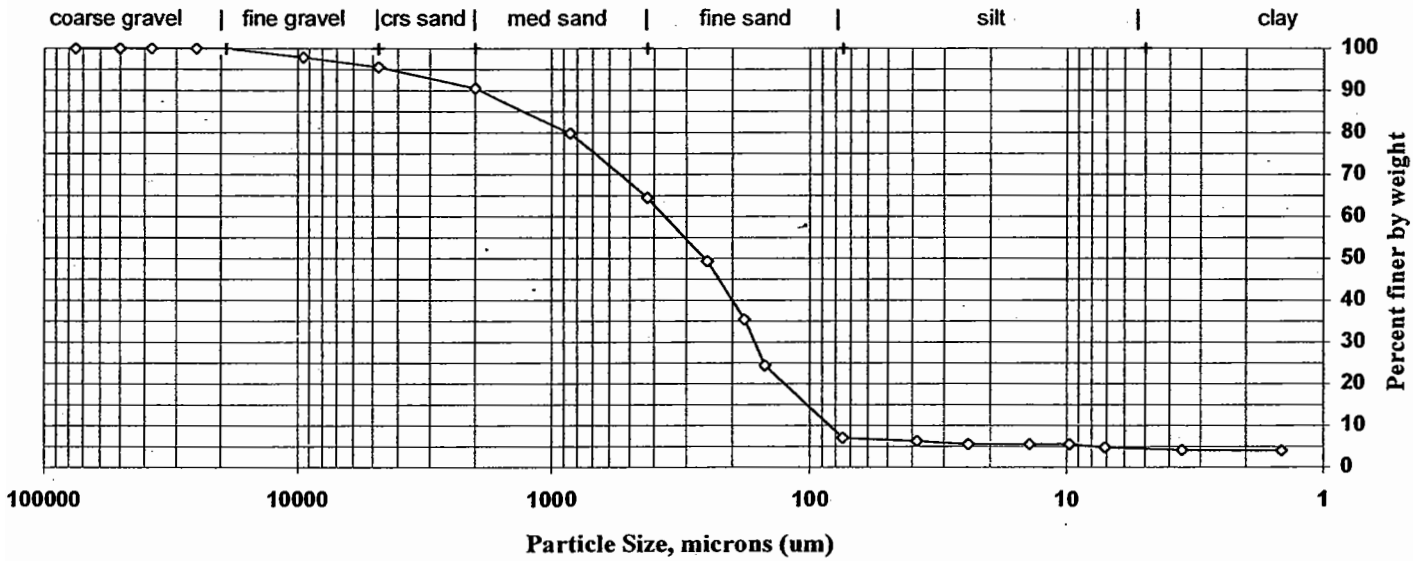
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99816
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	26-Apr-04	**Start Date:**	26-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568880 **Sample ID:** 18D SF-2004-B11

Percent Solids:	70.2%	**Maximum Particle Size:**	19 mm
Specific Gravity:	2.50	**Shape (> #10):**	angular
Non-soil mass:	1.6%	**Hardness (> #10):**	brittle



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	97.8	2.2
#4	4750	95.6	2.3
#10	2000	90.5	5.1
#20	850	79.8	10.7
#40	425	64.5	15.3
#60	250	49.3	15.2
#80	180	35.4	13.9
#100	150	24.4	11.0
#200	75	7.0	17.4
Hydrometer	38.2	6.3	0.8
|	24.3	5.5	0.8
|	14.0	5.5	0.0
|	9.7	5.5	0.0
|	7.1	4.8	0.8
|	3.6	4.1	0.6
V	1.5	4.0	0.1

Soil Classification	Percent of Total Sample
Gravel	4.4
Sand	88.6
Coarse Sand	5.1
Medium Sand	26.0
Fine Sand	57.4
Silt	2.3
Clay	4.8

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

0053

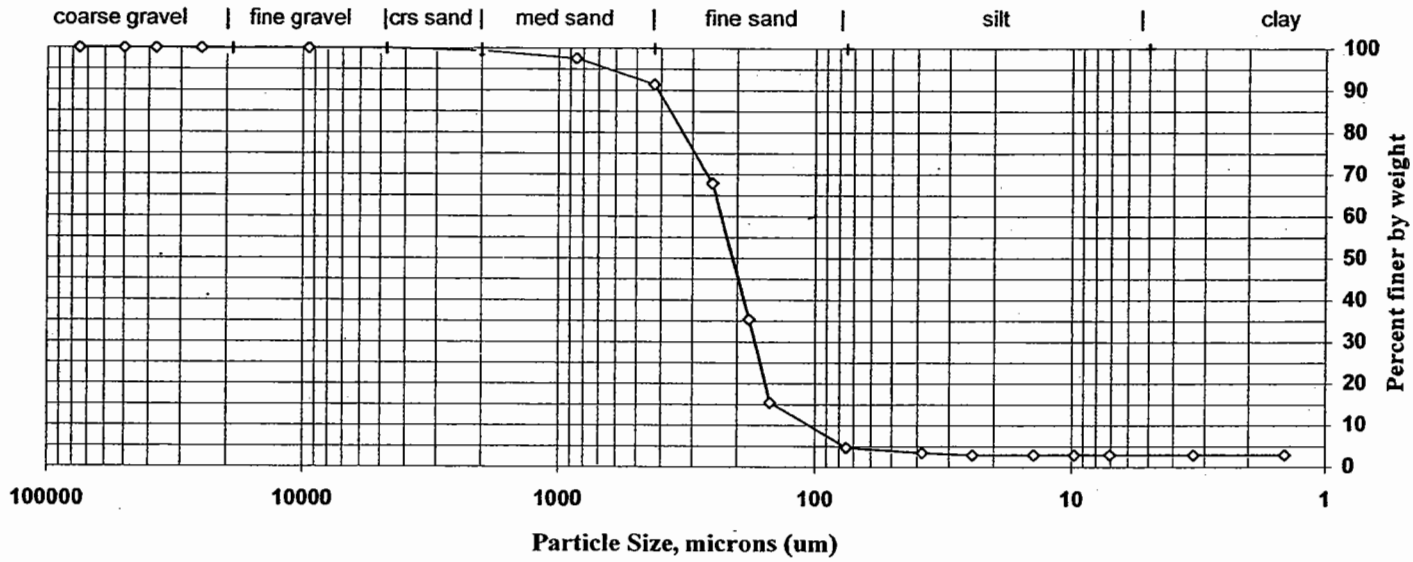
Particle Size of Soils by ASTM D422

Sample preparation method: **D2217**

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99816
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	26-Apr-04	**Start Date:**	26-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568881 **Sample ID:** 19C SF-2004-605

Percent Solids:	76.1%	**Maximum Particle Size:**	Crs sand
Specific Gravity:	2.57	**Shape (> #10):**	subangular
Non-soil mass:	0.0%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	100.0	0.0
#4	4750	100.0	0.0
#10	2000	99.4	0.6
#20	850	97.5	1.8
#40	425	91.4	6.2
#60	250	67.9	23.5
#80	180	35.4	32.4
#100	150	15.4	20.0
#200	75	4.7	10.7
Hydrometer	38.1	3.5	1.2
|	24.2	2.9	0.6
|	14.0	2.9	0.0
|	9.7	2.9	0.0
|	7.1	2.9	0.0
|	3.3	2.9	0.0
V	1.4	2.9	0.0

Soil Classification	Percent of Total Sample
Gravel	0.0
Sand	95.3
Coarse Sand	0.6
Medium Sand	8.0
Fine Sand	86.7
Silt	1.8
Clay	2.9

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

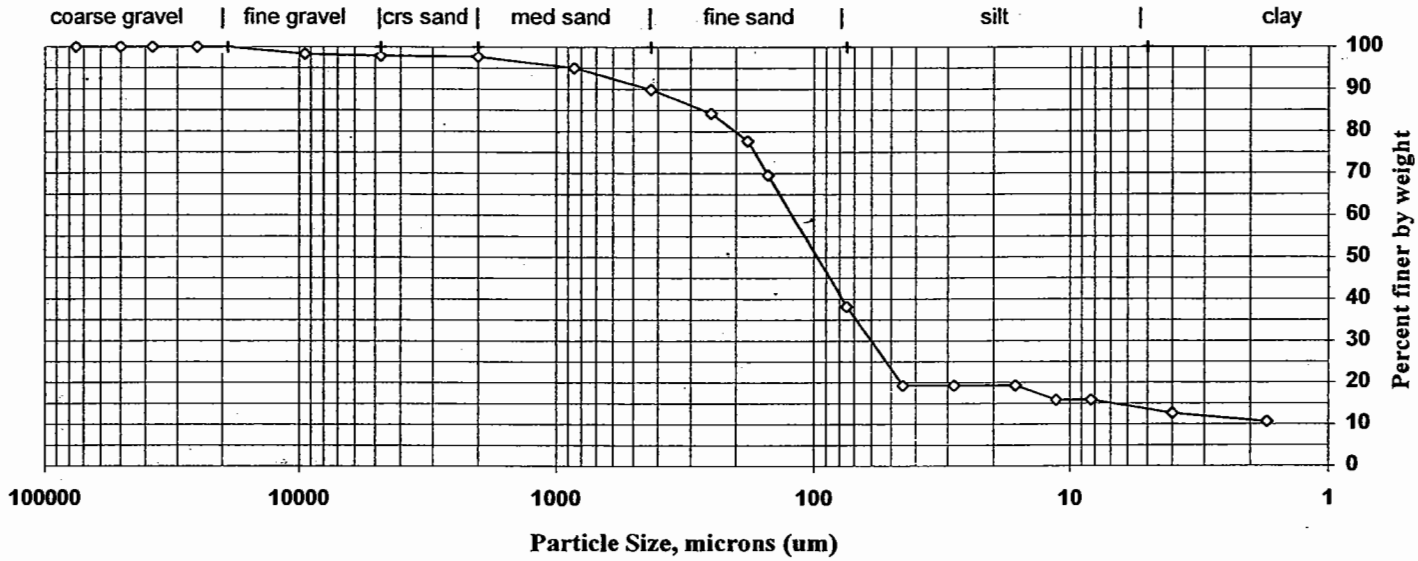
Particle Size of Soils by ASTM D422

Sample preparation method: D2217

Client:	MITKEM	**Project No.:**	24000	**ETR(s) #:**	99816
Client Code:	MITKEM	**Job No.:**	N/A	**SDG(s):**	99787
Date Received:	26-Apr-04	**Start Date:**	26-Apr-04	**End Date:**	30-Apr-04

Lab ID: 568882 **Sample ID:** 20D SF-2004-B10

Percent Solids:	48.3%	**Maximum Particle Size:**	19 mm
Specific Gravity:	2.07	**Shape (> #10):**	angular
Non-soil mass:	11.5%	**Hardness (> #10):**	hard



Sieve size	Particle size, um	Percent finer	Incremental percent
3 inch	75000	100.0	0.0
2 inch	50000	100.0	0.0
1.5 inch	37500	100.0	0.0
1 inch	25000	100.0	0.0
3/4 inch	19000	100.0	0.0
3/8 inch	9500	98.3	1.7
#4	4750	98.0	0.4
#10	2000	97.7	0.2
#20	850	95.1	2.7
#40	425	89.9	5.2
#60	250	84.3	5.6
#80	180	77.7	6.5
#100	150	69.6	8.1
#200	75	38.2	31.4
Hydrometer	44.9	19.3	18.9
|	28.4	19.3	0.0
|	16.4	19.3	0.0
|	11.3	15.8	3.5
|	8.3	15.8	0.0
|	4.0	12.7	3.2
V	1.7	10.6	2.0

Soil Classification	Percent of Total Sample
Gravel	2.0
Sand	59.8
Coarse Sand	0.2
Medium Sand	7.8
Fine Sand	51.7
Silt	22.3
Clay	15.8

Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute